A2: Transcriptions of Letters and Other Documents Relating to the Dodo (*Raphus cucullatus*) and the Solitaire (*Pezophaps solitaria*)

The following transcriptions are given in approximately chronological order, although some are grouped for ease of reference. They are divided into:

Handwritten Letters and Notes
    Letters relating to the dodo and solitaire 1831-1847
    Selected letters from the UMZC "Dodo Book"
    Letters relating to the dodo and solitaire 1848-1860
    Letters regarding the discovery of dodo bones at Mare aux Songes
    George Jenner's Report 1871 [+ extracts from Slater's and Isaac Bayley Balfour's MSS.]
    Selected extracts from the UMZC "Dodo Book"
Published Sources
Synopsis of Dodo-Related Communications from the Thirioux – Newton Correspondence, UMZC

Handwritten Letters and Notes

Letters relating to the dodo and solitaire 1831-1847

1: Letter from William John Burchell to William Swainson, dated Fulham 21st April 1831. Library of the Linnean Society, London, no.166. Page 2:

As to a visit to Oxford [...] I saw the Dodo's head there and also the painting of the whole bird –

Page 3:

Believe me to remain
my Dear Swainson
Yours always
sincerely & faithfully
Wm. J. Burchell

Cover page 4 [seal removed; circular black handstamp "G AP21 1831"; "6" written on]:

Wm Swainson Esqr
Tittenhanger Green
near St Albans
Herts

2: Letter from Richard Owen to his wife, Caroline Amelia, 4th September 1838. Temple University Libraries, Special Collections Research Center, The Frances Hirtzel Collection of Richard Owen Correspondence, 58. Identifier: MROX10058.

Plaats Royaal, Leyde, September 4th 1838.
Dear Caroline,

I spent
a glorious morning in the Museum at the Hague – there they have Savery's
real Orpheus & the Beasts,

Mrs. Owen
Rl College of Surgeons
Portugal Street, L. I. Fields.
London.

[red stamp]
4Eg4
SP 6
1838

[black stamp]
LONDON
6
SEP
1838

[page 2]

Savery's Orpheus is in a bad light – between two windows,– but what do you
think I espied in a dark corner – why a Dodo – a Dodo in full plumage
note that the artist & the Dodo, which you please - he lived between 1576 & 1639. He was contemporary with the
men whom Natural History describe as having brought the stuffed Dodaer from
the Mauritius. The nostrils are very far forward as in the Apteryx, &
the feet very similar in the relative position & size of the toes; I took
a sketch: the head precisely resembles that of the Oxford Museum specimen.

ever, Dear Cary, Your own Rich^{d}

3: Letter inserted in the copy of Owen & Broderip (1866), NHMUK General Library: Owen Coll. 55.

"I have made many enquiries
as to the bones which I said
had been found in some
caverns or holes in the rocks
in the northern part of this
Island. (Mauritius) I regret
to find that now no vestige
of them remains. M^{r} Barlow
who was then owner of the
place, tells me that none of
them appeared to him to be Fossil,
that they seemed to be the bones
of cattle which had got into
the holes but could not get out.
At a proper season I shall
make further enquiry into this
subject : in the mean time

M^{r} Bojer, author of the Hortus
Mauritianus, and a most excellent
naturalist, informs me that in
the Nat: Hist: Museum, of which
he is curator, there are some
remains supposed to be of the
Dodo, which have been brought
from Rodriguez, and Island
dependant on Mauritius, lying
about 6 or 7 degrees to the Eastward
of us. A special magistrate goes
there periodically to enquire
about the treatment of the black

population, and when I can learn
who does that duty next turn
I will have enquiry made."

'Extract of a letter from
Mauritius. August 5. 1844.
D^r^ Buckland's note Jan^y^ 28^th^ 1845.

4: Handwritten pencil notes on a copy of Strickland (1844):

These 2 bones sent by Strickland to
G. C. Cunninghame, Esq. of the Custom House
Port Louis in a letter dated "Nov. 1846", are with the
letter given to E. N. by some one he forgets whom in
Mauritius. The letter I have handed to Mrs. Strickland

5: Letter from John Hutton Balfour to William Jardine, 23rd January 1847. Royal Scottish Museum. (quoted in Jackson & Davis 2001, p.181):

There are a few bones of the Dodo in the Andersonian Museum you can easily
have access to them

The bones are by no means complete. They were examined by Dr. Scoular.

6: Letter from John Wolley, 6th December 1847. Balfour and Newton Library, University of Cambridge, Indian Ocean Volumes, Mascarene Islands, Vol.2, No.6.

(Copy)
3. Roxburgh Terrace Edinburgh
6th Dec^r^. 1847 –
Dear Sir
It is with great pleasure that I have just seen it
announced in the Literary Gazette that M^r^. H. Strickland
is preparing a History of the Dodos, ~~and its immediate~~
~~relation~~. I have long wished for such a work and
indeed had not been without a vague idea of preparing
one myself at some future time – with the view at all
events of collecting most accurately all the historical
evidence I have compared with one another all the
notices I could meet with in the Library of the British
Museum and studied the works in which they were
contained with a view to the ascertaining exactly how
far they were original and trustworthy. I found
this so interesting an occupation that I devoted much
time to it, far more than it is intrinsically worth but
I did not half complete the task I had imposed upon
myself – nevertheless I made a large body of notes. – I
satisfied myself on many points on which M^r^. Broderip's
paper in the Penny Magazine gave me no information
and I corrected several slight errors into which he had
fallen – as for instance his supposing the Sotilicarii
of Vasco de Gama could be the Dodo, his thinking that
Bontius' figure was not copied from the picture in
the Brit. Mus. &c. I also met with several slight

[...] [quotation from Benjamin Harry's MS., British Library: MS. Sloane 3668]

> They weighed from Carpenters Bay 12 Sept. 1681 with the
> Eagle and President two ships they had met with there,
> and they anchored in the Downes Jan 13. 1682.
> I did not see any mention of the names even of Bourbon
> or Rodriguez in this journal.
> Your next question is about the voyage of Heemskirk
> and Harmansz. The account from which M^r^. Broderip
> quoted is no doubt that written by the Schipper Willem.
> it is contained in the small quarto vols. of Dutch ~~travels~~ voyages
> in the Brit. Mus. I think the one which also includes two
> editions of Bontekoe's voyage, but perhaps it is one of
> Van Necks. I am sorry I cannot just now tell you certainly, for
> I have not my notes of this with me here, but I have written
> home (to Beeston n^r^ Nottingham) in hopes that it may be
> found. But I think you will not have difficulty in
> finding it in the Brit. Mus. remembering that the Journal
> is Schipper Willem's, though probably it is not in the catalogue,
> there are in it three or four mentions of the Dodo as
> Dodaarsen or Drontes and at intervals. Here I believe
> it is that it is first called Dronte, and there is a picture
>
> of men killing Drontes ~~which~~ ~~however~~ as appears by
> the description underneath the picture which however
> you will have to read before you will guess what it is
> meant for, should you not find the picture I have
> some indistinct recollection of there being two copies
> of this pamphlet ~~from~~ in one of which it does not occur.
> The voyage in which Schipper Willem made his third
> visit to the E. Indies is a somewhat difficult one to
> trace in its ramifications but I will not trouble you with
> particulars. He returned under Admiral Schuermans
> in company with Admiral Harmansen, and
> Heemskirk's V. Admiral Garnier or Grenier in the
> spring of 1603. so that this was the second voyage to which
> Clusius alludes though he seems to have been mistaken
> in saying that Grenier was with Van Neck, who it appears
> did not return from his second voyage to till several years
> afterwards. – Should you have happened to miss it you
> will find a very useful collection of these early voyages in the
> Brit. Mus. first in French, then an English translation,
> in it there are several mentions of the Dodo of which I have
> quotes as by Matelief and Van Soldt, you would probably find
> the mention of Verhufs in De Bry. I am concluding in haste
> to save the post but shall be most happy to give you any
> further assistance I may be able: I will send tomorrow my
> answer to your 3^d^. question – yours truly
> (signed) J Wolley

7: Letter from Strickland to John Wolley, 11th December 1847. Balfour and Newton Library, University of Cambridge, Indian Ocean Volumes, Mascarene Islands, Vol.2, No.6.

4 Beaumont St
Oxford
Dec. 11. 1847

Sir,

M^r Yarrell has forwarded to me a letter from yourself from which I find that you have been going over nearly the same ground with myself on the matter of the Dodo. I too have been researching out all the original notices on the subject which I could meet with, both in the libraries here and in the British Museum

It is possible, or rather I may say probable, that some important items of evidence may have escaped me, and I should therefore feel exceedingly indebted to you for your very obliging offer to communicate to me the results of you own investigations, and especially as regards ^the MS. which mentions "Dodos whose flesh is hard."

My own materials are already partly in the printer's hands, but it is not too late to incorporate any additional

information, which will of course be duly acknowledged.

M^r Broderip in the Penny Cyclopædia vol. 9. p.47 mentions a notice of Dod-aersen in the Voyage of Heemskerk and harmansz (4°. Amst. 1648). This book I have not been able to meet with, & M^r B. does not now recollect where he met with it. This is the only original authority which i have not myself consulted, & if you could direct me where to find a copy of the work, I should be much obliged.

I have not as yet met with any original account of the discovery of Bourbon and Mauritius by the Portugueze under Mascaregnas, an event which appears, on the authority of Flacourt, Du Quesne, and Leguat to have taken place in 1545,

though some compilers place it earlier.
In fact I have not yet found any
notice of these islands prior to
Van Neck’s Voyage, first published
in 1601. Can you help me to any
prior authority?
With many thanks for your
kind offer of assistance, I remain
your much obliged
J. Wolley Esq. H. E. Strickland

8: Extracts from three letters from John Wolley to Strickland, 15th, 18th and 21st December 1847. Balfour and Newton Library, University of Cambridge, Indian Ocean Volumes, Mascarene Islands, Vol.2, No.6.

Extract from Mr. Wolleys letter of 15th Decr –1847–
“I feel great interest in the subject of the Dodo, & it will
be a pleasure to me to write you a few notes in addition
to these two, if you will not mind the trouble of reading
them: but I hope you will clearly understand thiat is
will be with the hope that there may be some hint
amongst them which will be useful to you, & not from any
intrusive wish of giving you my opinions; & as you use the
expression, “which will of course be duly acknowledged,”
I must beg you not to think I should be gratified by any
quotation from my letters, for on the contrary should
you find anything useful in them I had rather you would
look upon them as mere indices, or at most from
which you have taken hints.”
2. Extract from letter 18th Decr 1847–
“My notes are unfortunately in such a rough chaotical
state, that you would be able to make nothing of them
or I would propose to send them to you. Indeed they are
in such an undigested form that I have by no means a
clear knowledge of them myself.” (same letter)
“There is a book with the picture of a Dodo in it, which
I have not seen, a copy of which was casually bought at a
sale in Derbyshire by an Uncle of mine, who gave it to
Prof. Owen, who passed it on to Mr. Broderip, this may
be the book to which you refer.”

Extract from letter 21st Decr 1847.
“I had not seen Leguat since the beginning of
“my feeling an active interest in the Dodo, for I had
“reserved him as a bon bouche, till I had fairly
“worked up to him.”

Selected letters from the UMZC “Dodo Book”

Numbers in square brackets represent the page numbers in the original “Dodo Book” prior to its dismantling. ‘D-’ numbers are taken from Rookmaaker (2010). Some of Melville’s letters were undated and dates have been added (presumably by Strickland). Excerpts quoted in Baker & Bayliss (2002) are not line formatted.

9: Alexander Gordon Melville to Hugh Edwin Strickland n.d. [1847] (D-227) [122]

24 Kings Road
Corner of Addison Place
Chelsea
Dear Sir
I have received the
[?] containing the drawing
and the box containing two
jaws which I left at the
British Museum for
safety. Sendivall [= Sundevall] had left
before your letter reached –
he had been at Oxford and
found that you were not
there, before I saw him.
I gave him a set of casts
for their museum. I hope
you have arrived safe in
Oxford. Dinkel has just
finished the foot and
heads a most excellent
job of it – all the material
is now collected – what
is to be done about getting

them put on stone – M^{r}.
Dinkel says that he will
make it a labour of love
if he is entrusted with it –
he says it will take some
months to finish – Pray will
you think of it – Meantime
the whole of the letter press
may be got ready. I am
getting translated the paper
on the foot of birds contained
in the Museum Transactions
[?] that part of
the question – I would I could
get the skull of the young
ostrich in the ashmolean sent
to London – for [?] drawing of
the orbital septum – as I
shall henceforth regard the
lacrimal in Birds as the Prefrontal
& name it accordingly –
My reasons I will give [?] some
[?] of M^{r}. Owen's [report?]

who has done the honor
to publish my views on ~~the~~
Sir P. Egertons bones, in the
Annals of Natural History,

without acknowlegement,
then to several other people,
and that when I pointed them
out to him – that he denied
their truth, of which Professor
Lamark will bear witness.
I shall point it out in
next months Annals –
I [?] the Dinornis' eggs
but the mandibles have not
arrived – I will see M^r. [?].
[Grey?] and ask when the book
containing the notice of
the Didunculus will appear
[?]
[?] of the ideas I had regarding
the Dodo –

10: Melville to Strickland 2nd November 1847 (D-228) [122]

24 King's Road
Chelsea
Nov 2. 1847

Dear Sir
I have put Dinkel
to work. but I hope to see
you ere we go to the bones
of the solitaire – I have
also managed the prospecutses
at the Geological Society –
and have got some more
subscribers names – I am
about to apply for the
Fullerian Professorship
of Comparative Anatomy
& Physiology at the Royal
Institution just declared
vacant – & I should be
obliged by a testimonial
from you and specially
if you could speak as to
my capabilities of lecturing
& conveying knowledge orally

There are some nos. of
Charlesworth's Journals
[?] at Horn's the hair
cutters for me and if they
could be be sent up – [?] London
I would forward the head
to [?] – I should
like much to see [?]'s
drawing – if you have an
opportunity of sending

it safe – I hope you
will be able to get the
woodcuts well done.
Yours most truly
A G Melville

11: Melville to Strickland 15th November 1847 (D-231) [124]

24 King's Road Chelsea
about Nov 15 /47

Dear Sir
I had just written a letter for you
I am very much pleased by the lithograph
of the Dodo – and it will do very well
indeed – I agree with you regarding the lettering
and regarding the printing by Reeve – I will
enclose a list of subscribers – Dinkel
has commenced and by the end of next
week I will forward you a proof of the
Head & Sternum from Paris – the Glasgow
bones are coming up or a section – for
which I am vey thankful – I had a letter
from Mr. Gourlie this morning – I have
just got the article on the Sternum & that
on the feet of birds translated from the
German – 1 of each no. of Charlesworth will
do for me – but all [extra?] left to be forwarded
to me – I will write [?] about the extra
numbers – the moment I am done of Dr.
Falconer's work – I will come to Oxford
meantime I will finish the main
work – so [?] to give the [?] at Oxford
[from?] the head –

I hope about the end of the year to come down
with Ford – and I think it would be
well to get the cut from the Penny
Cyclopedia – Pray have you sent any
prosepctuses to Edinburgh to any of the booksellers
I should have ere this thanked you for your
Kind testimonial – I am afraid that I shall
be ruined by my appearance at Oxford – I have
lost my situation by it – and here it is more than
likely to be the main objection to me at the Royal
Institution – I dreaded it before the meeting –
when I begged Dr. Acland to take my name
out of the local Committee list – and I wish
that I had done so myself & left without attending.
I spoke the truth for truth's sake and after
this has passed – the truth will shine the clearer
after persecution.
Would you have any objection to let me
[read?] the proof sheets of your part –
I am Dear Sir

Your truly
A G. Melville

12: Melville to Strickland 22nd November 1847 (D-233) [125]
[Melville thanks Strickland for procuring a cast of the Oxford head. Sends list of subscribers]
[32 Clarendon Street, Clarendon Square, London]

Monday afternoon
Nov. 22. 1847

Dear Sir

I had written you a letter on Friday evening but having been since confined to bed with a severe cold it was not posted I enclose a letter from Mr. Gourlie & I have received the femur for a section – Dinkel has just finished the plate of the head & sternum of the solitaire & you will have a proof on Wednesday morning – he has commenced the plate containing the Leg Bones of the Dodo – on the back of this letter is a list of 11 names all that I have got as yet – Reeve has got 16 in all including these – Pray how many have you got – I expect to get some more. I have to thank you for the trouble you have had in procuring the cast of the Dodo's head &c – what is to pay for it. I have seen Sir R. Schomburgk and he will manage the little affair

would you send me a note of the illustrations you want made from the Didunculus I think is is well to give enough of comparison figures in the plate that Dinkel is engaged in at present will contain the comparison figures of the brown pigeon, Geophaps' & Didunculus' leg bones – [?] would you have any objection to ask D^{e}. Blainville to allow some portion of the incrustation to be removed from the head & sternum of the solitaire – I think we might do it without injury – I expect D^{r}. Falconer's work will be done on the 19th of next month – So that I would endeavour to get Ford down after that and come with him myself – the election for the Professorship at the Royal Institution takes Place on the 10th of Feby and I enclose a list of the

Managers – I shall be ready with my part as soon as the plates – so

that the printing will not take long –
and I think it might appear about
the 1st of Feby I have left the
Prospectus at the Zoological Society
I remain
Dear Sir
Yours truly
A G. Melville

13: Melville to Strickland 5th December 1847 (D-229) [123]

32 Clarendon St
Clarendon Square
My dear Sir About Dec 5 1847
I could not send the
head – as Dr. Falconer came
to the Museum before it was
packed and wished to go on
with other things - [?]
[?] a particular
fish for Lamark – but
I will send the [?]
[specimen?] by the Firm
indicated – I have written
to Gourlie about the humerus
I have been busy preparing
leg bones for an extended
comparison – I hope to
send you a proof for them
on Monday – Pray

[He has been preparing leg bones for an extended comparison and now has 6 genera]

14: Melville to Strickland 18th December 1847 (D-230) [123]

32 Clarendon St
Clarendon Square
Saturday
Dear Sir Dec 18 1847
I have been now all over the
things which I have in London
& I cannot find the Treron
alluded to – I therefore think
that unless it is in Oxford in
the Anatomy School that you
may have mislaid it – I hope
to receive again the Glasgow
Bones today – with two others
which may be the humeri
alluded to by Dr. Scouler – It is
worth your while to come up to
London to see the Crania of
the Dinornis – I have not
yet seen these – from being

engaged so much with D^r
Falconer – who leaves tonight
& perhaps I may have to go with
him to Southhampton –
to arrange matters finally

I have not [?] [Kessler?] – hoping
to be able to send you a proof
of Dinkel's Plate, but I will not
send it to the Printers, he has
taken an infinitude of pains with it
and I will go over it scrupulously –
ere it is printed, and allow me
to suggest that as so much pains
have been spent over it, if you were coming
to London for a single day, if it would
not be possible to bring with you the
leg bone – to add some of the finer
touches on the stone – I have resolved
to have your opinion on this ere
sending it to the Printer – I should
be most anxious for you to do so
and any time within a fortnight
would do – as I must get on
with the Glasgow bones to be
returned within a fortnight. These
have just arrived but the supposed
humeri are the scapula & tibia
of the Tortoise – I will let you
know when Ford will go down
which I think will be after

Xmas – [?] be too late
to go with him – I hope the Society
will pay for it – If I go to
Southhampton I will be here
on Tuesday – D^r. Daubeny
spoke very kindly of our
undertaking – and I will
forward prospectuses by D^r. Falc[oner]
M^r. [Mitchell?] [your?] [?] next
Friday – I will send casts of the
bones & prospectuses by him
also a letter to D^e Blainville
for permission to get the Bones
cleared of the encrustation – I think
of Sir W. Jardine would allow
the Didunculus [?] that
it would be better to have
an original lithograph – for
I do not like the wood cut
I will send you the arrangement
of that plate - ere it is [?]

Pray excuse this delay &
believe me
Dear Sir
Yours truly
AG Melville

Pray address
D^r^. Melville
D^r^. Falconer's
B. Museum

15: Lovell Reeve to Strickland 20th December 1847 (D-294) (quoted in Baker & Bayliss 2002, p.113):

> [the book would be good commercially] as it is one that will furnish matter for the Reviewers

[lists nine reviews]

16: Melville to Strickland 28th December 1847 (D-225) [121]

British Museum
About Dec 28. 1847
Dear Sir,
I found the Dodo's foot
awaiting me on my return from
Sir J. Richardson's at Huslar – where
I saw a skeleton of the Geophaps
I have got Falconer & Cautley's names
&c. and I think that there is now
60 names in all. Mitchell &
Waterhouse who are now in Paris
are to [?] D^e^ Blainville about
getting the incrustation removed
from the bones – I have sent
[?] casts – I have therefore
delayed the drawing of the Meta-
tarsus for the present. but
two plates are nearly ready –
and I must get a third one
for the toes – what I will get
done for 2£ and it will
be absolutely necessary –
Ford will not be able
to come down ere middle
of Jany when he will

run down and take a look
at the bones – and either remain
there or return after any
preparations. He cannot
leave till he finishes 3 plates
for the 9th [?] of Dr. F. work.

I am going to Scotland for
a day or two to see my friends
and I will go to Glasgow and
look after the humerus and
other things in Glasgow. I
trust you have spent [?]
X/mas – & I wish you [?]
returns – I am
My dear Sir
yours truly
AGMelville

[mentions he will go to Glasgow & look at the remains]

17: Melville to Strickland 1st January 1848 (D-226) [121]

B. Museum
Jan. 1. 1848
My dear Sir,
I hope you have received
the letter I sent to Oxford – I
received the bones – and so far from
being done with them – that now
after a week's hard work on both
our parts – adding the finer touches,
that Mr. Dinkel is [?] with –
[minute? attention?] – and I [?]
looking after [him?] – and after
I return on Wednesday from
Scotland – I will [?] with
the remaining parts – but
then it will be the most
accurate thing possible – the
second plate has turned out well
& the dodo legs will be better –
I had no conception of the minute
attention [?] nor of the time
required for a good lithograph
but – I think it would be better
for the drawing to get the head
to London – No person but
Ford can possibl. do them
and it is questionable [?]

he could be a fortnight
to 3 weeks away – and I should
also be with him – I will
send copies of the plate to
Mr. Duncan which may
have some effect – the
Head would be at the B.
Museum and quite safe –
I will take prospectuses to
Scotland – we have now

upwards of 60 names – I
wish you many happy
returns of this season –
ever Dear Sir
yours truly
A G Melville

Note added to the letter in Strickland's handwriting (D-226a):

Mem Ask M. to send me an
exact list of the plates

Wrote to M. Jan. 7. 1848
1 To send Dodos leg to Kirtland next
Thursday
2 What is your present address
3 What of the little "Our Dodo-book"
4 Is the pamph^{t}. gone to Bowerbank?
5 I sent a Treron to draw the head.
6 Send me a list of all the plates.
7 Send size of Pelicans egg.
8 Will you come here with Ford?
9 See Charles Knight about woodcut

18: Melville to Strickland 19th January 1848 (D-232) [124v]

B. Museum _ Wednesday
Jan 19 1848

My dear Sir
After my return from Scotland, I suffered
severely from a violent cold – and was laid in bed
ere I could call on Charles Knight – yesterday I could
not lecture, but went to Knights ere I got your letter in
the evening – I am glad that it is arranged. I was only
an hour or two in Edinburgh so unfortunately had
not the opportunity of seeing Sir W. Jardine – but
Goodsir promised to go to Glasgow and search for the
humerus of the Didus Solitarius – Ball writes
me that a head of an albatross in the Museum of T.C.D.
is marked Didus Solitarius – I will answer your
questions in order – 1st The leg is safe – after Dinkel
finished the plate – I determined to [?] it – and
Ford will do the bones of the leg – and an excellent
young artist is now engaged on the Toes – and I have
resolved several points by softening the tissues & find
the remaining ends of the tendons were more generally
[?] cartilaginous than bones – Pray allow [me?] it for
another fortnight, when I will be done with it &
put it up permanently.
2nd My present address is 32 Clarendon St. Clarendon Square
but letters [reach?] me earlier at the Museum.
3dly I think the proposed addition would [ensure?] the sale
amongst those who will really purchase it as men
of science. No other class will purchase it and any

appearance of taking in is surely to be avoided.

There are now a great [no.?] of excellent subscribers
who would be sorry to [?].
4thy_ I delivered Mr. Bowerbank's Pamphlets
5thy_ I have the Treron's skin and it will do
admirably –
6th Nos of Plates –

Frontispiece 3. Vienna picture
4 Leguats frontispiece

5	[?]		Pl ~~1~~. $^{\text{Dutch [?]}}$	Illustrations of skin of head [~~?~~]	Gray Genera
6	[?]o		~~2~~.	– of leg at B. M.	
6 7	[?]o		~~3~~-	– for comparison, Treron, & [?] Didunculus	
7 8	[?]o		~~4~~-	Heads osteology	
8 9	[?]o		~~5~~-	do do	
9 10	[?]o		~~6~~-	Illustration for comparison	
10 11	[?]		~~7~~-	Leg bones of Dodo	
11 12	[?]o		~~8~~-	Toes of Dodo – Treron & Crown pigeon	
12 13	done		~~9~~-	Head & sternum of Didus solitarius	
13 14	done		~~10~~-	Humerus – Femur of do	
[?] 15	to done	be	~~11~~-	remaining bones	

probably may require another plate.
[7thly?] – about Pelican's egg – I will send drawing –
[in?] next letter.
8 – About Ford. I do think that it would much
faci~~l~~litate matters could we get the head here – I had no idea
of the difficulty of getting a thing well done – the Head
would be quite safe – by the way – the head was softened
by Cuvier in London – and Sir J. Richardson saw it with
his own eyes in that state at [~~?~~] Cuvier's Rooms.
Nobody but Ford could do it – and he is really
pressed as we must finish Falconer's work ere
the 20th of [?] and we have got

but little time – and I should also be with
him when he is drawing – to point out the more
important points – I would not trust any other
artist [?] – we should also have
the dried skin [to?] give a reduced sketch of –
to show the tubular cartilaginous nostrils would
you write to Mr. Duncan or shall I write to him –
the want of good artists makes [?] at present [?]
very [?] of sending them out of the way - & I am
endeavouring to bring up one –
No_ 9 is settled – I will send a note tomorrow
about [?] – [&c.?] but at present I am still
ill and I must put this in the P. office tomorrow morning.
I thank you for your kind congratulations – my wife
is the only sister of Mr. Broughton whom Mr [?]
I believe knows and a cousin of Leonard Horner
[...]
I am Dear Sir
Yours most truly

A G Melville
To H. E. Strickland Esq^{re}

19: Thomas Allis to Strickland 10th March 1848 (D-154) (quoted in Strickland 1849a, pp.137-138):

> On looking at plate ix* [of Strickland & Melville (1848)] I immediately perceived strikingly confirmatory evidence of your views as to the Columbidine affinities of the Dodo, unnoticed either by thyself or by thy talented coadjutor, in his elaborate anatomical description of the head of that bird. This evidence consists in the number of the sclerotic plates. At the Zoological Section of the British Association at Liverpool I exhibited dissections of the sclerotic ring of about seventy birds; among the seventy there were three species of *Columbidæ*; each of these three had *eleven* plates in the sclerotic ring; being the precise number figured in the Dodo. No other bird had a similar number, and none so small a number, with the single exception of the Australian *Podargus*, in which bird the sclerotic ring is composed of one single bone, without the smallest trace of a division into separate plates. No abstract of my paper on the subject was published in the proceedings of that meeting, and its contents were never made public.
>
> I exhibited the rings of eight species of *Raptores*; the smallest number of sclerotic bones in this order was *fourteen*; and seven species of *Gallinidæ*, *thirteen* being the smallest number of plates.
>
> I thought this confirmatory evidence of the correctness of your views could not be otherwise than acceptable to thee; if thou considerest it of sufficient importance to deserve to be made known through one of our scientific periodicals, be so good as to get it inserted.
>
> Thy sincere friend,
> THOMAS ALLIS.

20: Melville to Strickland 13th March 1848 (D-241) (quoted in Baker & Bayliss 2002, p.112):

> there will be no delay on my part as I intend to remain at home till it is finished

21: Melville to Strickland 20th March 1848 (D-243) [129]
On notepaper bearing the Zoological Society of London stamp at the top.

Mar 20. 1848
My dear Sir
I trust you will
excuse my not answering
your last – the skin $^{\text{of [Treron?]}}$ was
[~~?~~] ~~of~~ only brought me
on Saturday late at
night by M^{r}. West
I will send you a proof
of his plate before
the end of the week –
[?] he is now putting
[?] the Treron's leg &c
Ford will soon have
finished D^{r}. Smith's
Drawing & will [then?]
[?] finish the head

Dinkel is beginning
the legs – and West

will in a for night
[?] have done [?]ll
I wish very much
that you could delay
the plate of integuments
as I have just dissected
the Nicobar pigeon
for which I delayed
and now I am collecting
all the notes so that
there will be no
delay with manuscript
In haste to save the post
I am Dear Sir
Yours truly
A G Melville –

Mr. [Turner?] is to make
drawing of parts of
the nicobar for Mr.
Mitchell which
[?] will use –
the only one

22: Melville to Strickland 3rd April 1848 (D-244) [129]

Monday Morning
Apl. 3. 1848
My dear Sir
I did not get
your letter in time to
answer by post as I
had not been at the
Museum for some days –
dissecting Pigeons – I went
on Saturday to examine
the jaw of the Iguanodon
for Dr. Mantell. and found
your letters. My sole object
in omitting those passages
mentioned arose not from
the wish to include them
in the osteol. Pt. but to
avoid repetition – and
to render the argument
more limited – and I
have [?] that you

should [?] – to the

alterations – as I have
no share but as a describer
and will so state – It
must be understood that
the arguments are a
[?] stock affair – as
far as my part is
concerned. I have
added nothing except
in one instance – and
as for M^r. Owen's statement
it is not worth [?]
being [considered?] as a
strong point being a
specific difference – and
that was my sole reason
[?] it out
of the main [line?]

and [merely?] mentioning
it as a specific character
but do not on that account
think it – if you deem
it important. I again
repeat that the resume
of the osteological
evidence pro- and
con shall be a
[?] stock – and
therefore I believed
what I suspected to
be a better arrangement –
although I had at first
[?] making
farther alterations –
I think Ford would
like to do it [direct?]

and all the other heads
can be drawn to correspond
there is a [genuine?] specimen
of the pigeon with wattles
at the Zoolog. Society of
which I will send you
drawings for M^{rs}: Strickland
I am very much pleased
with West's new plate
of Glasgow Bones – it
will be good – I will
attend to all the other
things I am dear
Sir yours truly
A G Melville

23: Lovell Reeve to Strickland 11th April 1848 (D-315) (quoted in Baker & Bayliss 2002, p.112):

> I do not see much prospect of getting the book out. I have written twice to Dr Melville but have heard nothing from him [...] I fear many of the subscribers will lose their interest in it

24: Lovell Reeve to Strickland 9th June 1848 (D-326) (quoted in Baker & Bayliss 2002, p.113):

> Have you fully considered the propriety of calling this work "The Dodo Book", I fear it will very much offend the taste of naturalists, it has such a misery sound [...] would not "History of the Dodo" be preferable?

25: Strickland to Melville 21st June 1848 (D-249) [131]

> Dear Melville Oxford June 21 1848
> By a letter just rec^{d} from Reeve I am greatly
> concerned to find he has never yet received back the proofs which
> he [~~?~~] sent you on the 9th inst., nor has he rec^{d} any more MSS
> from you. It is needless for me to repeat what I have so often
> said before that this excessive dilatoriness is ruinous to the success
> of the work. By your delay you have lost the advantage of the
> London season, & you have lost the term time at Oxford, both
> w^{h}. circumstances will probably make a difference in the
> sale of at least 30 copies. There is now every prospect that
> the work will not be out in time for the Swansea meeting
> on the 9th of August, & that will make a difference of at
> least 20 copies more, so that the sale will be injured to
> the extent of 50 copies wholly in consequence of your
> not having sooner commenced the desc^{r}. of the osteoly
> portion. You have had the head ~~sin~~ ever since 16th of
> Feb. & the foot you had long before (from Dec. 21.) In
> your letter to me of Ap. 14 you say "As I leave for
> L'pool in a month I will ere that have the whole
> done" & yet here is the end of June coming & your
> part probably not half done. I fully admit the value
> of you minute & elaborate desc^{rs} & I am well aware
> that they require a greal deal of time to prepare, but I
> really think that the friendship & kindness I have
>
> always shown you might have been repaid by a little
> more promptitude on your part.
> M Duncan has written to me to urge the return
> of the Dodo head to its place before the Comm.
> I have accordingly written to Ford to [?] him to
> get it finished by Saturday next if possible, but
> if not I will give him to till the Tuesday
> following on which day [~~?~~] at the latest, I
> shall be obliged to go to London to fetch it.
> Yours truly
> H E Strickland

26: Melville to Strickland 29th July 1848 (D-255) (quoted in Baker & Bayliss 2002, p.113):

> I have now corrected the proofs and all is now finished [...] I only hope you are pleased with my part

27: Melville to Strickland 7th September 1848 (D-259) (quoted in Baker & Bayliss 2002, p.113):

> every person is well satisfied with the book and Ford's drawings are decalred perfection

28: Melville to Strickland 6th September 1849 (D-263) (quoted in Baker & Bayliss 2002, p.113):

> on the whole we will not lose a very great deal by the book and certainly we have shown an example in getting it up well and cheaply

29: John Harris, Jr. to Strickland 14th September 1852 (D-048)
[letter pasted on 41 with pencil tracing/sketch of Nieuhof's dodo pasted on same page]

> Radcliffe Library,
> Oxford. Sept. 14/52.
> Sir
> I found the Dutch Nieuhof
> in the Bodleian & I have copied
> the figure of the Dodo contained
> in it, & which I enclose – From
> what I can make out from a
> translation of Nieuhof, which is
> given in Churchill's Collection of
> Voyages Vol. II. & which contains
> a facsimile of the plate in which
> the Dodo is figured, I should say
> that it is not a description of
> his own but a mere repetition
> of someone else. –
> turn over
>
> [...]
>
> P.S. Mr. Duncan is in Oxford at
> present. – Mr. Kirtland is in a very
> poor way. I do not think he can
> last long. –

A comprehensive summary of the "Dodo Book" material can be found in Rookmaaker (2010).

Letters relating to the dodo and solitaire 1848-1860

30: Note and letter from Hugh Edwin Strickland to Richard Hooper 30th December 1848. Attached in Hooper's copy of Strickland & Melville (1848) in the Bodleian Library (189 h. 77), between pages 62 and 63:

> From H. Strickland Esq The President
> of the Ashmolean Society, author of
> "The Dodo and its' Kindred" in reply to
> a communication of mine in

which I sent an extract
from Randle Holme's Academy of Armory
relative to the Dodo. Received Jan. 1 1849.

The Lodge
Tewkesbury
Dec. 30 1848.

Dear Sir,
I am very much
obliged by your kindness in
calling my attention to
the extract from Holme's
work. One object which I
had in view in publishing
"The Dodo & its Kindred" was
to elicit further information

which had escaped my
notice, and it has already
supplied me with several
important items of knowledge,
among which the contents
of your letter are especially
interesting.
Does Holme mean that
the family name of the bearer
of the Dodo was Dronte?
or ~~does~~ if not, does he mention
the name of the family? I
should be particularly interested

to know of any family
now in existence bears that
bird either as a shield or
a crest, as it might lead
to further information on
the subject.
On reading the description
in Holme I do not see
much indication of originality,
and suspect he has transcribed
or compiled it from the
old accounts by Van Neck,

Herbert & others.
Nevertheless it is very
interesting to learn that the
Dodo has been enlisted into
the service of Heraldry,
and I beg again to thank
you for your kindness in
sending me this communication.

I am dear Sir
your much obliged
H. E. Strickland.

The Rev. R. Hooper

31: Letter from Hugh Edwin Strickland to Richard Hooper 14th March 1850. Attached in Hooper's copy of Strickland & Melville (1848) in the Bodleian Library (189 h. 77), between pages 62 and 63:

Apperley Green
Tewkesbury
Mar. 14. 1850

Dear Sir
I am very much obliged to
you for referring me to the
curious work called Ortus sanitatis.[1]
I have purchased the copy at
Bumstead's, and have been
much amused with the
very rude cuts in it, though
they certainly are more curious
than instructive. The figure
of the "Ardea" certainly has
some resemblance to a Dodo,

and so has the figure
of the "Struthio". But although
the work has no date, it is
evidently much older than
the discovery of Mauritius,
and these figures cannot
therefore possibly refer in
any way to the Dodo.
The figure of the "Ardea"
is evidently copied from, or
confounded with, that of the
Ostrich, as both have a
horse-shoe in their beak,
in allusion to the supposed

digestive powers of the
latter bird.
I incline to think that
Holme must have taken
the arms of Dronte from
some continental family, for

---

[1] Hooper (28th February 1850; D-160) enquired as to whether Strickland knew the *Ortus Sanitatis*, a book containing many bird illustrations, including one of *Ardea*, which resembled the dodo. He added that a copy was available at Bumstead's. He later (22nd March 1850; D-161) expressed his regret at persuading Strickland to purchase a work "so useless as the *Ortus Sanitatis*". Hooper subsequently wrote to Strickland (2nd April 1850; D-159), returning Strickland's MS and remarking that he had not encountered any more "Dodoana" (quoted in Rookmaaker 2010, p.246).

I cannot hear of any such
name among English families,
and moreover the word dronte
has never been used in
this country for the Dodo
I am dear Sir
your much obliged
H. E. Strickland.

The Rev. R. Hooper

32: Letter from W. D. Clarkson to Richard Owen, dated 26th March 1857, inserted in the copy of Owen & Broderip (1866), NHMUK General Library: Owen Coll. 55.

Church S. Kingston
Jamaica 26 March 1857

My dear Sir,
I have long desired to address you on the
subject of the enclosed engraving of the dodo
Its appearance in spite of its want of web
feet has always given me a notion of its
being an aquatic – [Eg?] why did the artist
place it so near the water. The wings
appear to be peculiarly placed & has
often induced me to speculate could
they assist the bird to swim – then there
is its peculiar beak – I have been
in a most [distressing?] state both of mind
& body [...]

yours truly
WD Clarkson
R Owen Esq FRS
[?]
London

33: Letter from Igino Cocchi to Giuseppe Meneghini (Letter 113), 26th October 1856. Department of Earth Sciences, University of Pisa. (Quoted in Corsi 2008, p.45):

To start with, if I had to tell you just something on all the marvels stored at the British Museum, I will never come to the end of my letter: I have seen with great pleasure the leg of the *Didus ineptus*, closely resembling the leg of a cock, though much bigger;

34: Letter from James Morris to Richard Owen 18th December 1860, inserted in the copy of Owen & Broderip (1866), NHMUK General Library: Owen Coll. 55.

Pezophaps

8 Gt. Ormond St
Queen Squ WC
18 Dec. 1860

Dear Sir

By the last overland
from Mauritius, I received from
the Curator of the Museum of
Port Louis the two fragments of
bones, which he suspects to be those
of the Dodo, and he is anxious
to have your opinion in the matter.
Under the circumstances, I have
taken the liberty of sending them
to you just as they came to me
on Saturday last. The Curator
writes to me: "Je les ai trouvés
dans

dans la Collection du Muséum déposés
à côté d'ossements fossiles de
Tortues recueilliés dans un dépôt
Calcaire aux Quatre Cocos à Flacq,
à une petite distance de la mer.
No1. me parait se rapprocher
à l figure 1 Planche XV de Strick-
land, et dans ce cas serait un
fragment du Tibia droit du
Solitaire-
N° 2 Se rapproche de la figure
2 a de la planche XV de Strickland.
Ce serait dans ce cas le métatarse
droit auquel il manquerait une
portion de l'articulation inférieure,
et la totalité de l'articulation
supérieure…. s'ils sont ce que
je les crois être, je vois prie de me
les renvoyer ensuite quand ils seront
examinés."

As my friend mentions the district
of Flacq, I know that several
fossil remains have been found
there; and some years ago when
I was in the island, I, and other
friends made an examination of
the locality in order to find some
remains of the Dodo at the request
of Mr Strickland, who was then
preparing his excellent work on
the Dodo &c –
If therefore, you will do
me the favour to give me your
opinion on the fragments I now
take the liberty of sending you, such
an opinion from so high an authority
will set the matter at rest.
I remain Dear Sir
very truly yours

> Prof. Owen James Morris.

Letters regarding the discovery of dodo bones at Mare aux Songes

Extracts from the Clark-Owen-Newton correspondence are reproduced here.

Unfortunately, Richard Owen's letters to George Clark and Alfred Newton's letters to Edward Newton are now lost. Edward Newton's letter book from March 1866 to March 1869 (carbon copies of correspondence) is also unavailable (Hume *et al*. 2009).

35: Edward Newton to Alfred Newton, 7th October 1865, 24/3, page 149 (quoted in Hume *et al*. 2009, p.37):

> The metatarsi fit the drawing in Strickland's [book] of the Dodo metatarsus most beautifully!!

Page 151 [On Clark's discovery of dodo bones at Mare aux Songes] (quoted in Hume *et al*. 2009, p.38):

> He [= Clark] is anxious however to make money out of it, and asked me whether I thought he could sell them, I told him I thought Owen might [buy some].

Page 152 (quoted in Hume *et al*. 2009, p.38):

> Mr Clark has been to see me again and begged I will not write anything home that may infirm [*sic*] the sale of his bones.

36: Edward Newton to Alfred Newton, 18th October 1865, 24/3, page 154 (quoted in Hume *et al*. 2009, p.42):

> I have some more bone news for you and plenty more Dodo remains have been found at the same spot by Mr Clark, and yesterday as we had occasion to go down the railway, the Gov^{r} and several others including myself inspected the marsh. There are I have no doubt remains of 100s or perhaps 1000s of Dodos

Pages 157-158 (quoted in Hume *et al*. 2009, p.38):

> Mr Clark is working to make as much money from his discovery as he can, so do not let out to anyone how plentiful the bones are [...] I fear however that the whole thing is now too much blown, and plenty of people will search and find ample remains.

Page 158 (quoted in Hume *et al*. 2009, p.39):

> Sir H[enry] B[arkly] professed that we should subscribe to work out the marsh ourselves, and I think that would be the best plan if Clark would consent, but unless he did I should not like to interfere with him.

Pages 158-159 [on Mare aux Songes] (quoted in Hume *et al*. 2009, p.44):

> To be able to do justice to the discovery the water must first be got out of the basin; this could be done either by pumping it over the rocky barrier some five or six feet higher than its present level, or by cutting a drain through it. The latter would be a superior work but more effectual. When the water is run-off, there will be no difficulty in carefully digging out the peat and even sifting it if necessary when dry.

37: Edward Newton to Alfred Newton, 4th November 1865 (Anthony Cheke, pers. comm., 10th December 2009). Page 179-180:

> Of course [Wilhelm Karl Hartwig] Peters of the Berlin Mus. may have some of the Birds. I would propose that we should share them with the Brit. Mus., Norwich Mus., Cambridge Philosoph., Bury St.Edmunds [?] & Ipswich [?]. I mean those that I get on my own account – and should of course keep some for our own Mus. here & [?Frinssnen?] asked me for some for the Cape – of Solitaires, that I have already sent him. Please to keep a set
>
> for Sir [?K.] N. [unidentified]. I did not give him a single one, and he wants some for Melbourne.

38: George Clark to Richard Owen, 5th November 1865 (Anthony Cheke, pers. comm., 3rd December 2009):

> I had the pleasure to forward you by last mail some bones wh. I presumed to be those of the extinct Dodo. I have since then through the kindness of the Hon. Ed. Newton been able to compare my discovery with the plates in Strickland's work, which prove to me that I have found the real thing I sought

Pages 128-129 (quoted in Hume *et al*. 2009, p.39):

> I shall be much obliged by you giving Alfred Newton an attestation as to the fact of these being the bones of the Didus ineptus, to facilitate the sale of some wh. I have sent him.

39: Richard Owen to Alfred Newton, 6th November 1865 [on Newton's application for the post of Professor of Zoology and Comparative Anatomy] (quoted in Hume *et al*. 2009, p.39):

> I have sent my request on your behalf to both Dons. & I don't doubt but the M[aster] of T^{r}[inity; William Whewell] will be swayed by any testimonial of mine in your favour. Could you send me a Copy of your acct. of the leg bones of Didus or Pezophaps.

40: Edward Newton, 7th November 1865 (Anthony Cheke, pers. comm., 3rd December 2009):

> some half a dozen people or more who have got bones

41: Richard Owen to Alfred Newton, 8th November 1865 (quoted in Hume *et al*. 2009, p.40):

> As soon as the Mauritian bones sent to me by Mr Clark arrive I will let you know, & you can see them at your leisure; Mr C. & the bishop will, I think, expect me to describe them & give the Discoverer credit for his painstaking: you will understand their feeling possibly some disappointment were I to make these treasures over to another, as I gladly would do to you, being over-full of work. In prospect of this little additional 'straw' I wrote for the copy of your last labour of Didus.

42: Richard Owen to his sister, Maria, 9th November 1865. Temple University Libraries, Special Collections Research Center, The Frances Hirtzel Collection of Richard Owen Correspondence, 624. Identifier: MROX40624.

British Museum,
Nov$^{\underline{r}}$ 9. 1865.
Dear Maria,

Believe me,
with best love to you both,
Your affectionate brother.
R. Owen.

[The following is written upside down, across the bottom of pages 1 and 4]

(After tearing up the envelope, I just remembered you had met the Bp. of Mauritius: he has sent me Dodo's bones.

43: George Clark to Richard Owen, 17th November 1865, page 134 (quoted in Hume *et al.* 2009, p.39):

> various other marshes have been searched for Dodo's bones by the Railway engineers, the Hon. Ed. Newton and others, but without any success.

44: Edward Newton to Alfred Newton, 18th November 1865, 24/3, page 191 (quoted in Hume *et al.* 2009, p.42):

> the present hole is pretty well exhausted

45: George Clark to Richard Owen, 23rd November 1865, page 135 [referring to the batch of dodo bones sent to Owen on 24th November 1865] (quoted in Hume *et al.* 2009, pp.39, 42):

> Of the last [several cervical vertebrae and ribs], please do take what you may find useful to making up a skeleton, and hand over the others to Alfred Newton Esq.
>
> These are the last Dodo bones I shall have to send, all attempts at finding any elsewhere have failed, even guided by the experience I have acquired.

46: Richard Owen to Vincent Ryan, 16th December 1865. Temple University Libraries, Special Collections Research Center, The Frances Hirtzel Collection of Richard Owen Correspondence, 627. Identifier: MROX40627.

British Museum, London
16.th December 1865

My dear Lord Bishop
Through your kind offices, my eyes have, at
length, been gladdened by the sight of the bones of
the Dodo. M^r Geo. Clark's second parcel was
brought to me yesterday by his Brother in Law Capt.
Mylius, and, having completed the first comparisons and
rough determinations of their nature, I lose no time in
acknowledging and replying to your most acceptable
letter of the 7$^{\underline{th}}$ October.
M^r Clark's[2] collection includes most of the bones of

the skeleton and all those of importance for testing
the hypotheses of the affinites [*sic*] and place in Nature of
this most strange and extinct Bird, the Didus ineptus of
Linnæus. Besides bones of the Dodo there are a
few referable to a small beast, and a large tortoise.
The Dodo's bones belong to 5 or 6 different individuals.
the toe bones are wanting: and, I fear, if Mr Clark has
transmitted any part of his gatherings of these bones to
other quarters, that he may have spoilt our opportunity

To the Ld. Bishop of Mauritius

of reconstructing the entire skeleton of the bird.
However, I have submitted the collection ~~h~~as it has reached
me to my experienced Colleague, Dr Gray F.R.S., in whose
Department the few remains of the Dodo we previously
possessed are kept, and I enclose a copy of his Letter.
Another copy will go by this post in my Letter to Mr
Clark, and if he be willing to accept the offer of £ 100
for the collection now in my charge, he will have for
the bones more than their weight in gold.
I believe the sum for which Dr Gray is willing
to recommend to the Trustees the purchase, is a fair
and handsome equivalent: I suppose Mr. Clark
had better reply to that offer by return of post; unless
he may have authorized Capt Mylius to accept a
fair offer, such as I believe the present to be.
And now having gratified my long-felt yearnings to
know more of Didus; I find those with regard to
Æpyornis growing stronger. Madagascars marshes
and turbaries may yield similar evidences of this
gigantic extinct Bird. After the Aye-aye the
Æpyornis is the main desideratum from that Island,
for Zoology. I read with real pleasure your
Lordships letter relating to the success of your Missionary
work, and wish it continued prosperity.
I propose to communicate an account of Mr Clark's

discoverys to the Royal Society (if not anticipated by
descriptions of specimens that may have reached other
hands). Again thanking you for all the kind
and valuable interest you have taken in this matter ″
I remain,
Your Lordship's very faithfully & gratefully,
Richard Owen

47: Philip Lutley Sclater to Alfred Newton, 19th December 1865 (Anthony Cheke, pers. comm., 3rd December 2009):

My dear Newton,
There is a box here for you which perhaps contains Dodo's bones. Owen has got his – a nearly complete skeleton. I saw it today – very fine – 2 good

---

[2] "Clark's" written over "Clarke's".

sterna [note in Hume *et al*. (2009): the box mentioned may in fact have been unrelated to dodos, as Newton already had his material in Cambridge].

I think the best thing you can do with your lot – if you will take my advice – is to hand them over to Owen in order that he may take out any bones that are deficient in his series, and so render the Brit. Mus. Collection complete. Owen will put back in your box other bones in return for any he may select – so as to make an equally valuable collection for sale at Stevens.

Very truly yours P.L.Sclater

48: Philip Sclater to Alfred Newton, 25th December 1865 (quoted in Hume *et al*. 2009, p.40):

I am not much surprised to hear what you say about Owen, but if you have made the offer that is quite sufficient – and you have done all I wished – I see the bones are advertised at Stevens

49: Richard Owen to his sister, Eliza, 25th December 1865. Temple University Libraries, Special Collections Research Center, The Frances Hirtzel Collection of Richard Owen Correspondence, 628. Identifier: MROX40628.

[green stamp]
Sheen Lodge
Richmond Park.

Christmas Day, 1865,
My dear E.

[page 4]

The Dodo I owe mainly to the
Bp. of Mauritius: it was found
– its bones to wit – in a morass
by one of the Diocesan School-
-masters, for whom I hope to get
£100. I have been working
in the day & dreaming o'-nights
about my xmas-bird for a
fortnight past. It proves to be
a great Ground Pigeon, grown too
big to fly, & so let it's wings go to waste.

believe me, your affectionate
R. O.

50: Alfred Newton to George Clark, 26th December 1865 (quoted in Hume *et al*. 2009, p.40):

As I informed you I was about to do, on the 12th inst I came to London expressly for the purpose of communicating your discovery – in your own words – to the Zoological Society.[3] In the course of the day I saw Professor Owen [crossed out]. The announcement created, as I expected it would, very considerable interest – and I afterwards took the opportunity of mentioning to many persons who were present that the bones would be almost immediately sold by Mr Stevens with

---

[3] Anon. (1865d) reported this as follows: "Mr. A. Newton read a letter addressed to him by Mr. H. O. Clark, announcing the discovery of the remains of some bones of the Dodo in Mauritius" (p.893). "H. O. Clark presumably being an error for George Clark.

> whom I had arranged that the 5th Jany [1866] (which was the earliest day available) should be fixed for the sale. I also acquainted Capt. Mylius with what I had done. A few days after, the two boxes of bones, forwarded through Mr Samuel Clark reached me at Cambridge in safety & I at once set to work to divide them into sets such as I thought would be most suitable for a sale [...] The small parcel addressed to Prof^r Owen I forwarded to him, & I hear from him that it reached him safely
>
> On the 19th inst. Captain Mylius wrote to me (but being absent from Cambridge I did not get the letter till some days later) to say that after conferring with Prof. Owen and your brother Mr Samuel Clark, he had come to the conclusion it would be to your advantage that I should hand over to them the bones for disposal, and that his letter would relieve me of all responsibility. To this I replied that under the circumstances I of course must comply with their wishes though otherwise most willing to act as your agent in these matters
>
> I have unfortunately not yet been able to see Capt. Mylius, though I have twice proposed an appointment with him. I hope however I may have that pleasure tomorrow & then place in his hands the bones which you sent me for sale. I trust that you will not think I have betrayed the confidence with which you honoured me. It was impossible for me to set up my opinion against those of your family & a man of Professor Owen's eminence. The steps I had taken would, I believe, have been instrumental to your interests had I been able to continue them. I can only say that I trust you will be no loser ultimately by the change of plan & agents.

[following Owen's refusal of Aldred Newton's offer of his own dodo bones] (quoted in Hume *et al.* 2009, p.40):

> I hardly know how far I am now justified in keeping the beautiful and interesting specimens which were to be my 'honorarium', since I have been able to do so little for you

Alfred Newton had met Owen and Captain Mylius on 12th December 1865, although was not aware that the two had made arrangements regarding Clark's dodo bones. Alfred planned that the bones sent by Clark, sent on 24th November 1865, would be sold at Stevens' auction on 5th January 1866 (Hume *et al*. 2009).

51: Edward Newton to Alfred Newton, 3rd January 1866, 24/3, page 221 (quoted in Hume *et al*. 2009, p.37):

> I went to see Mr Clark [...] and he gave me the pelvis of I think a Gallinula found in the same marsh [...] It is in good preservation and hence convinces me that the smaller bones of the Dodo are still to be found if the place is properly searched.

52: Richard Owen to his sister, Maria, 11th January 1866. Temple University Libraries, Special Collections Research Center, The Frances Hirtzel Collection of Richard Owen Correspondence, 630. Identifier: MROX40630.

> [green stamp]
> Sheen Lodge
> Richmond Park.
>
> 11 January, 1866.
>
> My dear Maria,

[page 2]

I had slept at Wm Coopers
the night before after reading my
Paper on the Dodo, at the Zoologl Society.
I have now rec.d, chiefly through the
Bp: ^of Mauritius all that was needed to settle
the place of that strange bird in
Nature: & a very desirable
addition to Zoology it was &
I rejoice to have had the luck to
make it.

from your affectionate Brother, Rd. Owen.

53: George Clark to Richard Owen, date missing [?late January/February 1866], 123 [mentioning two people, not named, who were collecting bones without Clark's permission; the previous page of the letter is missing] (quoted in Hume *et al*. 2009, p.43):

> Judge then of my surprise at seeing an extract from his letter so worded as to allow it to be implied that they were bones which he had *discovered*, and that he had only supposed them to belong to the Dodo, when he was perfectly certain of the fact, and making no mention of the way in wh. he had procured them. I believe, herein, that he cannot supply anything like as complete an assortment as I have sent, and therefore hope they will not injure the sale of mine.
>
> Another person whose name I will not mention, having endeavoured to get some bones from me, in vain, employed people to go at night and steal some, which they did; and he carried them to England, perhaps to boast of them as his discovery.

54: Edward Newton to Alfred Newton, 4th February 1866 [on Owen's refusal of Alfred Newton's offer of his dodo bones] (quoted in Hume *et al*. 2009, p.40):

> I have told him [= Clark] that this you offered to do, but Owen would not accept your advances

Pages 235-236 (quoted in Hume *et al*. 2009, p.41):

> I must say that I feel very indignant about the conduct of Owen in the case of Clark's Dodos. He has shown himself to be a very mean minded illiberal sort, and I am very much vexed that I [*sic*, = he?] should have been the cause of so much annoyance to you [...] and I greatly fear that Owen may injure you for the professorship in a vindictive manner.

Pages 238-239 [quoting a letter to him from George Clark] (quoted in Hume *et al*. 2009, p.40):

> With regard to your brother's delicate proposal not to retain the bones, as the business has been taken out of his hands, I have only to reply *ignod* [= quod?] *dedi dedi* [what I have given, I have given] & I am happy to be able to add to what he has, an ulna and a radius, should they be wanting in his set.

Pages 238-239 [quoting George Clark] (quoted in Hume *et al*. 2009, p.41):

> 'I feel very greatful [*sic*] to him (i.e. you) [= Alfred Newton] for the kind interest he expresses in my affairs, & still more for the quiet and gentlemanly way in which he put up with what would be to a person in any wise touchy, a cause of much vexation. I fancy, this is strictly confidential, that Prof. Owen must have expressed some little feeling of jealousy at not having all the bones submitted to him [...] I need say no more on this disagreeable topic. From yourself and your brother I have met with the most gentlemanly and candid behaviour, for which I shall ever feel grateful' [...] Clark, I think, is evidently afraid of Owen, and though he feels that you have been shabbily treated, yet he thinks that perhaps Mylius was right in handing them [= the bones] all over to Owen.

Page 239 [on Owen's discovery that Higginson had found dodo bones and that there were to be more bones to be sold at auction] (quoted in Hume *et al.* 2009, p.43):

> The Governor showed me Owen's letter to the B[ishop] of Mauritius [Vincent Ryan], which the latter had sent him to read – he says that it was a pity that Mr Clark had not sent all the bones to him, as that if they became scattered about some of the most important portions of the skeleton might be lost sight of – but he makes no mention of you [= Alfred].

Pages 239-240 (quoted in Hume *et al.* 2009, p.43):

> He [= George Clark] did not seem very satisfied with the sale to the Brit. Mus., which I consider a good one, as I have little doubt 1000s good sets can easily be obtained if the place is properly worked. This is of course entre nous, but Clark knows my opinion and believes in it, but of course won't allow it.

55: Edward Newton to Alfred Newton, 4th March 1866, 24/3, page 247 (quoted in Hume *et al.* 2009, p.41):

> I am very glad you have made it up with Owen, but no man I think could have behaved worse. Can you not get hold of your paper on the Dodo which you have withdrawn and send it to me – I might perhaps prig [= borrow, steal] something from it for a paper I mean to read before I go home on presenting some Rodriguez bones to the society here.

56: George Clark to Richard Owen, 5th April 1866, pages 117-118 (quoted in Hume *et al.* 2009, pp.43-44):

> I sent with the last you received various series of bones, some in excellent preservation. I have requested Mr Newton to allow you to exchange any you have for any among them, as it may probably happen that you may thus make a better adjustment of the different parts. [...] Various persons have explored marshes in the hopes of finding remains of the Dodo, but I have not heard of a single instance of success. Mr E. Newton is about to prosecute researches in the marsh from wh. I obtained mine, but it is not likely that he can do so successfully before Aug. or Sept^{r}, the water being now too deep to permit of any work being carried on in it. I hope and believe that you will find among the bones with Mr Newton one or more sternums in wh. the side processes are very nearly perfect; should you not, I have one wh. I will reserve for you.

57: George Clark to Richard Owen, 15th April 1866, pages 119-120 (quoted in Hume *et al.* 2009, p.44):

I had many letters to write by last mail, wh. I hope will plead my excuse for neglecting to reply to that part of your letter wh. proposed offering to the Trustees of the Brit. Museum in my name, the Dodo bones I last sent you, I beg you will have the kindness to do. I had expressed a wish to that effect to Capt. Mylius, but it may probably have escaped his notice [...] You have no doubt received my authorisation to exchange any bones you have, for others comprised in the lot sent, in charge of Mr Newton. Strange to say, there is no present appearance of the finding of any other deposit of Dodo bones. Will you kindly mention this to persons thinking of purchasing, as it may favour the sale of those I have sent.

58: Letter from George Clark to Richard Owen, 5th November 1867, inserted in the copy of Owen & Broderip (1866), NHMUK General Library: Owen Coll. 55.

Mahébourg, Nov. 5, 1867.
Professor Owen
Dear Sir
I fear you
must have thought me very negli-
gent, not havg. acknowledged your
valuable and much esteemed work
on the Dodo. I only received it a few
days ago, and take the earliest oppor
tunity to return you my best thanks
for it. I had had an opportunity
of perusing it before my copy arrived,
H. E. Sir Hy. Barkly having kindly
lent me his.
It is a remarkable circumstance
that no vestige of that singular bird
has been found in any other spot
that that in wh. I found such a
large deposit of its bones. I think

that the remains of more than three
hundred individuals must have
been taken from "Mare aux Songes".
I have packed and sent to [?] Blyth's
a box for the Zoological Society, con-
taining some specimens of the Squilla
stylifera, and also some roes and
spawn of that curious crustacean.
I shall send a paper wh. I have
written on it and its habits time
enough to arrive before the box,
wh. goes by the sea-route.
The box and the paper will be
addressed to Mr. Sclater, with a
request to place them at your dis-
posal.
I regret much to say that our
excellent Bishop is soon going
to leave us: family considerations
render it expedient for him to

> return to England.
> Hoping you may long be able
> to continue your useful and
> most interesting labours, I beg
> you to believe me
> Your obliged friend
> and very able Servant
> Geo Clark.

59: Edward Newton to Alfred Newton, 6th May 1869, 24/4, page 39 (quoted in Hume *et al*. 2009, p.44):[4]

> Poor old Clark went home a month ago [...] He was somewhat better but very excited at leaving. I did not know he was going in this ship therefore never saw him to say good bye. I wish you would send the money for the last lot of bones sold to his brother who is an alderman Clark at Southampton.

60: George Clark to Alfred Newton, 15th May 1870 (quoted in Hume *et al*. 2009, p.45):

> I am very glad to hear of the improvement in your brother's health, wh. I hope has continued & that he has regained his usual health & vigour. The notes on the Dodo I most want are those I sent first and I shd also be glad to have that number of the Ibis wh. contains your notes on the Aphanapteryx.
>
> I am in about the same state, but am following Dr Willis's directions, hoping by patient attention to his prescriptions to recover that strength, the want of wh. obliges me to write such a wretched scrawl. When you write to your brother, pray assure him of my best wishes for his recovery.

61: Edward Newton to Alfred Newton, 10th August 1874, 24/5, page 287 [mentioning that Henry Slater was excavating a marsh in the district of Flacq] (quoted in Hume *et al*. 2009, p.37):

> He [*i.e.*, Slater] got a phalange of the first tow [= toe] of the Dodo, a bone which I do not think was ever found at Mare aux Songes.

62: Richard Owen to George Burrows, 15th October 1881. Temple University Libraries, Special Collections Research Center, The Frances Hirtzel Collection of Richard Owen Correspondence, 1040. Identifier: MROX51040.

> "My dear Burrows
>
> What I believe is, that 'species' are done to the operation of a 'Secondary Law'.
> How that 'Law' operates I am still ignorant, as in 1849, when, at p.86 of the little
> book 'On the Nature of Limbs' I confessed thereto.
> Lamarck has tried to explain its 'modus operandi', and so has Darwin: but I find
> the former more applicable to the cases of the Dodo & Dinornis than the latter. The
> wings of these birds aborted for lack of use: they had no stimulus to resort
> the strenuous act of flight. Food & nesting places were on the ground, & no en[emies]
> till the Dutch slew the one kind in ye Mauritius & the Maories the other kind in N[ew]
> Zealand. The legs of those flightless. 'wingless Birds' gained by exercise what the wings lost.

---

[4] The date was given as 6th May 1896 by Hume *et al*. (2009); it should be 6th May 1869 (Cheke, pers. comm., 2nd December 2009).

The conditions summed up by Natural Selection are, by me, inapplicable &
unintelligible in such instances. Nor has it's Author yet informed us of a
one species the development or establishment of which has been 'observed
that way.
It is otherwise with the extinction of species; there, the operation of the 'contest for existence' is explicable.

Your's [*sic*] R. O.'
To
"Sir Geo. Burrows, Bart, M. D." –(Sheen Lodge 15 October, 1881)–

George Jenner's Report 1871

63: Jenner, G. 1871 Report on the Remains of the Solitaire found in the Caverns at Rodrigues in the months of January and February 1871. Balfour & Newton Libraries, University of Cambridge: Indian Ocean MS. Volume Item No.29. Page 1:

29
[stamp: MUS. ZOOL
CAMBRIDGE *
A. NEWTON BEQUEST *
AUG. 10, 1907]

Report on the Remains
of the Solitaire found in
the Caverns at Rodrigues
in the months of January
and February 1871.

Page 3:

Island of Rodrigues
18th March 1871.

Report on Bones of the Solitaire,
found in the Caverns of Rodrigues
in the months of January and
February last, forwarded this
day to the Honorable E. Newton.

In the outset of this report I deem
it my duty to offer an apology for the
very unsatisfactory results of the
search I undertook, at the request
of the Honorable Mr. Newton, in
the months of August, September
and

Page 4:

and October 1866, and more particularly
as regards the missing report which
I then promised to draw up, to state
that at the moment I consigned the
last results of my search to Mauritius

I was suffering from severe disposition;
but nevertheless obliged to give
my attention to public business of
importance, and in the hurry and
confusion of packing up at the
last moment documents innumerable,
both public and private, I
unfortunately enclosed my memoranda
respecting the remains of the Solitaire
to a destination for which they were
never intended, and from which
as I have explained to M^{r}. Newton,
I

Page 5:

I was unable to recover them. –
The compilation of a second
report would, under the circumstances,
have been a matter of guess-
work, as unfortunately, when I
became aware of the mis-carriage of
the original, the individual whom
I had put in charge of the laborers[5]
had destroyed his rough diary
from which it had been compiled.
I may in fact state that the
whole search had been conducted
in a most unsatisfactory manner:-
Within a very short time after the
arrival of the laborers sent by
M^{r}. Newton, I was unexpectedly
required to proceed to Mauritius,
and

Page 6:

and on my return, in six weeks
time, I was accompanied by the Government
Surveyor, who was sent specifically to –
dispose of Crown Lands, and whose work,
during the two months he remained
here, would have been materially delayed
had I not devoted all my time to
assist him in the object with which he
was charged – My absence and –
subsequent occupations compelled me
therefore to delegate the digging out of
the caves, which I had intended should
have taken place under my personal
supervision, to one of my subordinates,
who unfortunately, from the same
causes, had duties entailed upon
him, as my representant, which prevented

---

[5] Hume *et al*. (2014) considered this the probably be Thomas Morris.

him

Page 7:

him giving the attention I could have
wished to the prosecution of the
search I had undertaken for M^r^. Newton.
The foregoing remarks will I trust
exonerate me from what might otherwise
have appeared a want of attention
to the subject in which I knew M^r^.
Newton to take such deep interest,
and in which I should only have been
too happy if circumstances had
permitted me to afford him the assistances
I had voluntarily promised. –
On the present occasion I am glad to
state that circumstances have been
in every respect, propitious, and I
trust that the result of labors, which
have been so carefully carried out
may

Page 8:

may compensate in some degree for
the want of success on the former
occasion. –

As a prelude to my report on the
last researches I think it may not
be uninteresting to offer a few general
remarks on the Island of Rodrigues,
and more particularly on that part
of it which has been the locality
selected by myself (at the instance
of M^r^. Newton) as well as by others
who previously labored unsuccessfully
to discover the remains of the Solitaire.
Before do so however, le me candidly
avow my profound ignorance on all
subjects

Page 9:

subjects which might prove sources
of interest to the geologist or naturalist,
and, on this account, request that
anything which may be said throughout
this report may be simply set down
as the observation of one who has the
desire to be useful, in so far as his
capacity may permit, in the object he
has undertaken, without having in
any way the pretention of throwing any

light on the subject of M^{r}. Newton's
interesting researches, beyond what
could be afforded by any casual
observer of facts, possessed of a
very ordinary degree of intelligence.–

As

Page 10:

As regards the Island itself
let me observe that its peculiar
formation renders it, I presume, a
subject for interesting study on account
of its distinct traces of Volcanic
origin – In shape it is extremely –
irregular, its coast line being a –
continued series of Capes and Bays,
the whole of which would be most
nearly circumscribed by an irregular
ellipse, having its longer axis, of about
thirteen miles, lying almost East –
and West, and the shorter, of about
four and a half miles, lying almost
North and South;- the whole of the
Island being moreover surrounded
by a dangerous coral reef, which on
the

Page 11:

the Eastern side is in many places
not more than sixty yards from the
main land, whilst on the South, west
and North west, it stretches out to
distances varying from three to five
and a quarter miles.

From the East point, for about
two thirds of its length, it has a –
central ridge of mountains, varying
in height from about eleven to sixteen
hundred feet, and from this ridge
to North and South, run off to the
shore a succession of alternate ridges
and valleys, the slopes of which are so
steep that their ascent or descent is in
most places a matter of difficulty, and
in very many an actual impossibility.
From

Page 12:

From the point to which the above
formation extends, at two thirds of
the length of the Island, (going westward
for the remaining third) the land

slopes more regularly towards
the shore in all directions, and, although
still more or less diversified by
hill and dale, there are in this
portion large tracts of table land,
which are not to be found at all in
the Eastern portion, of which I have
spoken, whilst the inaccessible
slopes are here altogether unknown.
On the Southern side of this
portion, that is on the South west
corner of the Island is a plot of land
about two miles in length and
averaging

Page 13:

averaging about half a mile in width
of an extremely curious formation.
Almost the entire crust of the earth
from the shore to its highest point, I
suppose some eighty or ninety feet above
the level of the sea may be said to be
a mass of hard flinty coral, whose
jagged edges protending at every step,
tell fearfully on the feet of the tourist,
unless protected by very strong shoes.
In small patches, seldom of more
than a few feet in extent, this crust
of coral is interspersed with a dry
sandy soil which in rainy weather
becomes glutinous mud – Brush
wood and stunted trees grow
everywhere, some even of larger
growth

Page 14:

growth are found the roots of which
are imbedded in coral. –
Caverns large and small exist in
numbers unknown over the entire
extent of this land, and the hollow
sound of the earth in walking over
many places, near which no opening
is known on the surface, gives ample
proof that it is nearly all more or
less undermined by unknown caves,
diverging from such as have been
penetrated by apertures which have
been considered too small or too
dangerous by the few enquiring
tourists who have visited the place.
In the recent search for the Bones
of the Solitaire the men had on
several

Page 15:

several occasions to work by –
torch light-, whilst in one hole to which
they could find only one outlet sufficient
for the body of a man to pass through,
they noticed that the smoke of their
torches was carried in an opposite
direction, going away through a small
fissure in the rock, curiously led the
individual in charge to see where
this smoke found an outlet, and
having increased its volume by
lighting a fire of dry leaves, he –
eventually discovered it coming out
of the mouth of a large cave some
250 yards away–
I have myself penetrated many
of these caverns creeping on my –
hands

Page 16:

hands and knees, determined on finding
fresh outlets, and have often been
obliged to give up the undertaking
whilst the current of air plainly told
that if I could have forced my way
further I should have found another
route to the surface. –

Fissures on the surface of the coral
with land slips, varying in depth
from two and three feet to twenty five
and thirty are met with everywhere,
from these, in some cases by steep
inclines, in others by perpendicular
descent by the roots of the "La Fouche",
and again in others from the level
at the bottom of the land slip, an
entry

Page 17:

entry is generally found to some cavern
where stalactites are seen hanging
from the roof, or growing upwards from
the spot on which water is constantly
dropping, some forming almost perfect
columns, of ten or twelve feet in
height, and others in every grotesque
form.-
The magnificent beauty of these
caverns in some of which by the

gradual crumbling away of the coral
on the crown of the arch, domes to the
height of fifty or sixty feet are formed,
is a thing which baffles description,
and, so one who has seen them, may
easily excuse my feeble attempt to connect
with the discovery of the bones of the
Solitaire

Page 18:

Solitaire an idea of the grandeur of the
natural tombs in which these relics
have been found.
Apart from this and in explanation
of the real object of my entering into
a brief description of the Island my idea
is, after reading for the first time the
extracts from Leguat's book contained
in the report of Messrs Newton,
that the western portion of the Island
is the only place likely to have been
selected by such a bird as the Solitaire
as its resort:- A bird of such weight,
which could not fly and in a plain
could be outrun by a man, would
not be likely to select for its haunts
the inaccessible steeps of the Eastern
part

Page 19:

part of the Island where even the
goat which jumps from crag to crag
so often finds its passage impeded;
and it is therefore natural to believe
that generally speaking the birds –
confined themselves to the table
lands on the western end, and that as
roosting on trees was an impossibility,
as they were unable to raise themselves
by the wings, the entrances to the
caverns, which I have described,
afforded natural dormitories, in the
vicinity of the plains where they passed
their days in search of food.
Coupling with the above impression
the fact that large tropical birds
make their haunts, and, if undisturbed
also

Page 20:

also their sleeping places, near the
banks of some stream my last researches
were confined to the vicinity of a streambed

known as “Rivière Quitorde”, which
intersects the land I have described
as the locality in which the Caverns are
situated:- the results of the search
will, I think, be found to bear out my
impression that here, at any rate, if
after the lapse of more than a hundred
years so many Bones are still found,
the Birds which once graced the adjacent
plains must have been innumerable.

Before closing this report by a –
detailed account of the several localities
in which the bones were found I
cannot omit calling attention to the
assertion

Page 21:

assertion made by Leguat respecting
the “stone” invariably found in the –
gizzard of the Bird, or as D’Heguerty says
the “Bezoard” ordinarily found:-

In 1866 I was not aware of the reported
existence of such stone, and therefore
directed no attention to the matter:-
In my recent researches presuming
that stones described as “hard and heavy”
could not be so perishable in their nature
as the bones of a bird, I directed the
utmost attention to their discovery,
but found nothing in any way corresponding
in shape with the description given
by Leguat.-

In compliance with my orders
every thing found in the shape of a
stone

Page 22:

stone was preserved, and I send the only
three which turned up in the excavations
made by four men in a month. –

These stones it must be remarked,

Though not agreeing with Leguat’s –
description, were found close to the
Bones; - the largest one dug up with
the remains of a large bird, contained
in case N^{o}. 1, and two smaller ones
in between two blocks of coral, where
the remains of two birds were found,
contained in lot N^{o}. 3.-

Although far from entertaining
the idea that they are the “stones” or
“bezoards” found in the Solitaire, I
must nevertheless remark that their
presence in such a place would if they

were

Page 23:

were of the regular shape given by
Leguat -, be in itself (if nothing more)
a strange coincidence, as no other
stony substance whatever was found
in any of the caverns.-
Coral and sandy soil are the only
Substances here found, either on or
below the surface, excepting such stones
as have been deposited in the bed of
the streamlet by floods coming down
its course from the higher table lands.
One would think however that if
the stone was really as described by
Leguat – a hard and heavy substance
many of them ought to have been –
discovered:- Again if, as stated by
D'Heguerty, they were considered –
"utiles

Page 24:

utiles dans la medecine" the natural
idea is unless reference is made to
their virtues as "matronly nostrums"
is that they were either soluble or
capable of being easily pulverised,
and in this case one can imagine
that perhaps the moisture of the ground,
which is considerable during the rainy
season when at times many of the caves
are from three to five feet deep in water,
or the action of the atmosphere may account
for their disappearance.-
As I have before stated anything
which in my ignorance, I may advance
on such a subject must however meet
with a charitable reception by those
who are able to form more correct –
opinions

Page 25:

opinions on the matter.
In general remarks my subject is
now exhausted (a fate which I think
it more than probable my readers
patience will have met with long
before he has accompanied me to this
point) so let me in conclusion attempt
to convey the information which probably
comprises all that was required from
me, and to which I should perhaps have

acted more wisely had I confined my self.-
As explained in the report of Messr^{s}.
Newton labor in this Island is difficult
to be obtained, I may add, difficult indeed
as regards the discovery of the Solitaire
for the caverns themselves have such
horrible associations in connexion with
the

Page 26:

the superstitions of the Natives of the
Island that not one of them would
willingly put a foot into such places, in
fact it took all the persuasion of a smart
recruiting agent to get me together a band
of four men, who were all Malagaches
recently arrived in the Island, and
fortunately not sufficiently imbued
with local ideas respecting the dangers,
natural and supernatural, attached to
their undertaking.
With these men under the intelligent
supervision of one of my subordinates (an
Englishman who has been twenty eight
years in the Island) I commenced work
on the 15 January, and terminated on the
15 February, having during that time –
excavated

Page 27:

excavated in thirteen places, and as
requested by the Honorable M^{r}. Newton I
send, in separate lots, the whole of the
bones of every description which were
found in each place.-
For breakages, and (if such exist) for all
shortcomings in carrying out M^{r}. Newton's
views I may plead that, however anxiously
one may pursue such a task, difficulties
which must be encountered to be properly
understood are met with at every step.-
when labor is carried on, as it was in
several cases, by torch or fire light, down a
hole some twenty five feet deep, with an uneven
surface where footing was very insecure,
and where the want of ventilation, the
heat of a tropical sun, and the additional
heat

Page 28:

heat and smoke of torches and fires –
rendered the place a perfect oven – Add
to this the means of ascent and descent

by the root of a tree and the hauling
up of everything to the surface in baskets,
and I think nothing more need be
said to excuse all mishaps.

═══

The Bones marked N^{o}. 1 contained
in 2 caves were found at the place
called "Caverne Vangasaille", a –
beautiful dell formed by a land slip
which I should say must have taken place
at some very remote period – In form it is,
as far as I can judge, the dense brush wood
rendering it a matter of difficulty, something
of an irregular Ellipse about 95 yards
long

Bones N^{o}. 1

Page 29:

long and 50 wide, its greatest depth is about
35 feet, the sides in many places being
perpendicular or overhanging – From
the North west the descent, though broken
by masses of coral, is easy either for man
or animal.-

The dell has two long caverns and
several smaller ones branching off
from it.-

The first of these goes in a distance
of about sixty feet, the dome, which from
its appearance, and the irregular masses
of coral on the floor, appears to have
fallen in at some distant period, has a
hole in its summit about 12 feet long
and 6 feet wide, going up to the surface
of the earth above; - down this hole
there

Page 30:

there now drop the roots of a "La Fouche",
which come some 30 feet through an
open space from the tree above and then
bury themselves in the irregular floor
of the cave.-

At the end of this cave, in a patch
of sandy soil some three yards square,
surrounded by irregular blocks of coral,
these bones were found, covered by soil
varying in depth from one to two and
a half feet – the excavation was continued
to a greater depth and abandoned as
no trace of any bone whatever was
found below the depth I have named.

═══

The Bones marked N°. 2 were found in the same cave as N°. 1, in another cavity Bones N°. 2

Page 31:

cavity between the blocks of Coral, distant about 12 feet from the first and about half its size.– covered by about the same depth of soil.

Bones N°. 3. The Bones marked N°. 3 were found partly strewn on two blocks of Coral, which had a distance of barely two feet between them and partly on the surface or at a few inches under the soil in the cavity thus formed – distant only about 10 feet from N°. 2.-

Bones N°. 4 The Bones marked N°. 4 were found in another cavity, some three square yards in extent, separated only by a block of coral from N°. 3- greatest depth under the

Page 32:

the soil two and a half feet.

Bones N°. 5

Bones N°. 5 in a similar cavity, a few feet from N°. 4, at a like distance below the surface.-

In all the above cases I account for the presence of the Bones in this Cavern on my hypothesis that it was a natural sleeping place, or if not, at any rate, the very place to which the bird would flee for shelter in extremely bad weather. I account for the soil by which the bones were covered as having been partly formed by the crumbling away in the crown of the cave, and partly washed in heavy floods through the hole which communicates with the upper surface

Page 33:

surface of the earth.-

The entry of the cave is too difficult to leave any idea of the Birds having been brought there by wild pigs, and the size of the remains, in many cases, quite

negatives the idea of the entire body
having been dragged by a wild cat, or
even dismembered by a such an animal
until the flesh had become too putrid
for its food.

Bones N^o. 6 The Bones marked N^o. 6 were found
in the entrance of one of the long Caverns
of which I have spoken, which branches
off from the dell at a few yards distant
from the small cavern before described.

The mouth of this cavern is about ten
yards

Page 34:

yards wide and goes in about fifteen
yards to a sufficient height for a man to
stand upright, when it becomes so low
that further ingress must be made on
the hands and knees.-

The diggings for these Bones extended
over the mouth which I have described
to the depth of about two feet under the
surface – the soil here contained a
large quantity of small broken coral
and grit, a fact for which I account not
only by the crumbling away of the overhanging
ledge above but also on account of this –
being the natural outlet for flood waters
from the dell to the "Rivière Quitorde" which
can be reached by traversing the cavern.

In this place many of the bones
were

Page 35:

were found very near the surface.-

To this place I may apply the remarks
about its being a natural resort for
the bird. It is also a place to which
either a wild pig or cat might easily bring
its prey.-

Bones N^o. 7 The Bones marked N^o. 7, contained
in one case, were found about four
hundred yards from "Caverne Vangasaille",
in almost a direct line between this
place and the "Grand Caverne".- They
were taken out of a fissure in the upper
surface of the coral, in the form of a semicircle, about 20 feet long and 10 in depth,
going down perpendicularly.

The width of the crack at the surface

being

Page 36:

being about 2 feet, and the sides closing
gradually until they meet at the
depth above named.- Some sixteen or
eighteen feet from the fissure I have
named is a corresponding one, forming
the opposite part of an irregular
circle, which is about 8 feet long and 3
feet wide, and goes down obliquely into a
cave about 110 feet deep. The whole of the
surface between these two fissures has
gone down about two feet below the
surrounding level, leaving no doubt
that a land slip had taken place at
some remote period by the falling in of the
cave below.- The fissure in which the
bones were found had in it several very
old roots of trees, which must have
grown

Page 37:

grown since the opening had taken place.
The Bones themselves were some
of them at the bottom, whilst others had
been arrested in their descent by having
fallen cross-wise, or by the passage,
in its irregular sides becoming too –
straitened.
My opinion in this case is that
the bird must either have fallen
accidentally into the crack, or perhaps
in bad weather sought refuge there
and been unable to get out again.- I
thought this was, of all others, the most
likely place to find a perfect specimen;
but although my European assistant went
mad first down the crack and tried in
all directions by groping with his fingers
his

Page 38:

his efforts were not rewarded with
the success they deserved.
The second fissure going down
into the cave, in which not a single
bone could be found, appears undoubtedly
to have opened out at a much more
recent date than the first, from this
I form the opinion that the first may
in some measure have changed its form
since the bones came there, and that

those which, from one cause or another, had got to the greatest depth have been crushed up by the closing of the bottom of the crack.-

* * *

Bones N°. 8

The Bones marked N°. 8 contained in one case were found in a cave about
100

Page 39:

100 feet long and 30 feet wide just on the edge of the slope about 250 yards from the "Grande Caverne" coming south down the "Rivière Quitorde."

The entrance to this cave is by a fissure on the surface, about 16 feet long, going in for a few feet obliquely, and then dropping almost perpendicularly into the bottom, a distance of about 20 Feet.

The Bones were found some few on the surface and the remainder at distances varying up to 2 feet under the soil.-

The work had to be done torch and fire light.

The opening on the surface, as it now stands, is not a likely place to have
been

Page 40:

been selected as a dormitory, although it would afford shelter in bad weather, but the general appearance of the place leads me to imagine that this cavern had a larger mouth further down the slope, which has fallen in some great length of time ago, the fissure, as it now stands, being the line on which the overhanging ledge broke away;- so that the bird may at one time have had a much more natural entrance to the place where the remains were found.-

The soil by which the bones were covered I again account for as being partly deposited by flood waters, and partly formed by the crumbling away of the roof of the cave.

* * *

Page 41:

Bones N°. 9

The Bones N°. 9, contained in one case, were found in a cave about 30

feet long and 20 feet wide opening out
to the surface by a fissure in the coral
10 feet long and 4 feet wide – The descent
through this fissure sloping irregularly,
over loose blocks of coral, to a depth of
10 feet.– Bones were found some few on
the surface and the remainder at various
distances not exceeding two feet under the
soil.-

The place itself is not a likely one to
have been selected as a regular retreat
by the bird, but might have been
gone into for shelter in bad weather.-
The number of Bones which I take to be
those of the Booty, found here leads
me

Page 42:

me to imagine that this place had been
the resort of wild cats, animals which
are known to pray on this bird, which
they seize and destroy easily when, as is
often the case in bad weather he is
carried to the ground, from which he
rises with difficulty.-

I account for the bones being under
soil, as I have done before, by flood
waters and the crumbling away of the
roof of the cave. –

The work in this place was done
by torch light in smoke and heat that
were suffocating.-

The Bones N°. 10 contained in one — Bones N°. 10
case were found in a hole about
25

Page 43:

25 feet deep, going down quite perpendicularly,
the descent being by the roots of a "La
Fouche";- the sides and bottom of this
hole are formed of large irregular
blocks of coral, the surface in the
bottom being about 10 feet square.

The bones were found under about
2 feet of earth, this being I believe partly
the deposit of the flood and partly formed
by the crumbling away of the sides of the
hole.-

The only idea that can be formed
as to the manner in which the bones
came into such a place, as it now appears,
is that the bird must have fallen

into the hole, as however the surface
of the coral all round appears to have
sunk

Page 44:

sunk considerably and is broken
up here and there by fissures, it
is probable that there was formerly
a cave in this place, to which the
descent was gradual enough for
the bird to have found access to
the interior.-
This hole lies south of "Caverne
Vangasaille" about 200 yards, coming
parallel with "Rivière Quitorde"
towards the sea shore.-

* * *

Bones N°. 11

The Bones number 11 contained in
one case were found about 250 yards
further to the south than N°. 10. –
The place forms an Elliptical land
slip about 50 feet long and 25 wide,
going

Page 45:

going down by a somewhat irregular
descent on the North to a depth of about
14 feet below the surrounding level of
the surface – round the southern end
of the Ellipse, from the bottom of the
land slip, as fissure in the Coral
goes down obliquely about 50 feet,
being so low that one is obliged to
creep through, whilst inside it
gradually increases in height
until the cave in the interior
is in some parts 10 feet high.-
In this cave the bones were found
some few on the surface, the remainder
about a foot under the soil, some
few perhaps rather deeper.-
The land slip itself and the
mouth

Page 46:

mouth of the fissure in particular
appear to me natural places of
resort for such a bird.-
I think the bones were probably
washed from their original place
by floods which must at times
inundate this cave.- The earth by

which they were covered had I think
been mostly washed into the cave,
although some part of it appeared
to have been formed by the crumbling
away of the coral.

Old trees growing in the bottom
of this land slip shew plainly
that the place has not changed its
form for a century.

Page 47:

Bones N°. 12. The Bones N°. 12 contained in one
case were found in the bottom of
a small cave perhaps 300 yards
south of N°. 11 on the west side of
Rivière Quitorde".- It has a perpendicular
depth of 25 feet, the opening on the surface
being a fissure 10 feet long and 2 feet
wide,- descent being by the roots of a
"La Fouche",- Bones were covered by
soil varying in depth up to 2 feet. – This
soil appears nearly all to have been
washed in by floods.-

As the place stands the only –
conjecture that can be made is that
the bird fell into the hole; but the
broken surface, sloping away to the
bank of the River, leads to the
supposition

Page 48:

supposition that the cave may at one
time have had an entry on the side
of the slope, the fissure, forming its
present opening, being the line on
which the overhanging ledge of coral
had broken away – work done
by torch light.

The Bones N°. 13 contained in one Bones N°. 13
case were found in a small cave
about 300 yards east of N°. 12.- The
entry being by a fissure in the rock
10 feet long, going down by an easy
slope about 25 feet into the cave.- Bones
under a foot of soil, apparently partly
washed in and partly formed by
crumbling

Page 49:

crumbling away of top of cave.

A very natural sleeping or
sheltering place for the bird.
/Signed/ George Jenner.
Memo: The 3 stones are put up in
case No. 6.
/Jn 1^{d}./ G.J.

[Page 1: “Mr George Jenner’s” added in pencil]
[Page 18: ‘report’ crossed out in pencil and ‘Memoir’ added]
[Page 25: ‘report’ crossed out in pencil and ‘Memoir’ added]
[Page 39: “work had to be done torch” – ‘by’ inserted in pencil]
[page 42: ‘pray’ crossed out in pencil and “have preyed” added]

Slater *c.*1875

“Abstract from H. H. Slater’s Report, on Rodriguez-Collection”, Royal Society Transit of Venus Expeditions. Correspondence and papers relating to distribution of collections and preparation of reports 1875-1876, DF 202/9, NHMUK General Library.

Abstract from H. H. Slater’s Report,
on Rodriguez-Collection

Mixed with the cave-earth was a
large admixture of
land-shells, including

[...]

The following bones of the
Solitaire have
been found by me for the first time.
Phalange [*sic*] of the wings
Caudal vertebræ
Patellæ
Pterygoids
Sclerotic
Trachea

Columellæ
Hyoid
Sesamoids
and these small bones, if but for the most part
of small value, may instance in some
degree the carefulness of my search in the
caves.

The phalange of the wing of which I
give a marginal sketch, was very like
those of Goura and others of the Columbidæ
butas might be expected thicker and stouter
in proportion, from the apterous nature
of the bird : of this bone I only exhumed
two specimens, of which one, the one
figured, has in a degree the same
exostosed outgrowths which occur in so

many of the bones.

of the caudal vertebræ I proceeded in making a series for the mounted skeleton : the last one or ploughshare I figure: there was only one specimen of this.

The patella, of which there are many bears but little resemblance to those of any related bird : it bears a stronger likeness to that of Meleagris gallopavo. It is very large and massive.

The ulnar carpal presents no very abnormal appearance : I did not find the radial.

The sesamoid is exactly like that of Goura, but of course on a larger scale.

I may mention that three crania found by me were almost or quite perfect: one was entirely so and the other two lacked only one quadrato-jugal each : the beaks of all these were attached.

In the pelvis the difference which is most striking between that of Solitaire and that of Didus is the relative breadth across the upper surface from acetabulum to acetabulum, as mentioned by Prof. Newton. I should imagine there was a difference of almost a third in two average specimens, Didus being the broader. I agree with the above author as to the eighteen coalesced sacral vertebræ, though I believe one specimen in my collection has nineteen.

I have several specimens of sternum, shewing two costal processes, which I think no previous specimens include: in one both are present, and the posterior end is also perfect. I should much like to have this specimen figured with my report. The posterior end shows little or no trace of the notch which is generally thought characteristic of the Columbidæ: but in this point it resembles the Didunculus. Four is the normal number of sternal ribs, as Prof. Newton thought, but one specimen has four on one side and three only on the other.

The scapulæ of Pezophaps are extremely curious : their [sic] is such an extreme amount of variability in the shape of their free extremities that I do not believe that the two belonging to the same bird were necessarily alike in shape.

> D^{r}. Garrod once asked me if I knew of any case
> of there being two separate perforations in
> the atlas of the Solitaire, one for the spinal
> cord, the other for the occipital condyles. [*sic*] I
> replied I had seen none, but as he
> then declared it to be a feature of interest
> among the columbidæ, I made more careful
> search and discovered a specimen which
> I figure above. As a rule there is no
> bridge between the condyles and medullary
> foramina.

Figures (ink sketches), pasted on fol.2: "Ulnar Carpal" and 'Sesamoid'.

Isaac Bayley Balfour c.1875

Balfour, I. B. *c*.1875 unpublished manuscript of Balfour's report on the botany of Rodrigues (1879). MSS. ROY Manuscript, General Library, Natural History Museum, London. (Quoted in Hume *et al*. 2014, p.17):

> I should have mentioned that I found no palaeontological specimens save bones of various birds, etc. along with a few shells in the caves, but as their investigation was the work of one of my colleagues, I need say nothing regarding them.

Selected extracts from the UMZC "Dodo Book"

Extracts from notes preserved in the UMZC "Dodo Book". 'D-' numbers are taken from Rookmaaker (2010). Numbers in square brackets represent the page numbers in the original "Dodo Book" prior to its dismantling.

64: Sketches of solitaire bones (D-009)

> 1. anterior view of Tarsal bones.
> 2. posterior view of extremity of some
>   Tarsal bones shewing articulating
>   surface for the Hallux at x ?
> 3. Right femur

[1 = tarsometatarsus cranial view; 2 = tarsometatarsus caudal view; 3 = right femur]

65: Notes (D-026) [18]

Note: no differentiation is made in these transcription [D-026 to D-039] between text written in ink (comprising the majority) and text written in pencil, unless stated.

> The peculiarities of the Dodo's skull are
> 1 The zygomatic bone which in most birds
> is very slender, straight & vertically compressed
> is here considerably curved outwards ~~in front~~ $^{\text{to the side of}}$
> of the orbit, & compressed obliquely inwards &
> ~~out~~ upwards, somewhat as in the Caprimulgidæ, but without any
> corresponding expansion of the lower jaw.
> 2 the $_{\wedge}$ $^{\text{inter}}$ orbital septum, which in other birds
> is either absent, or a more thin plate, is
> here ~~represented by~~ composed of largely developed
> air-cavities connected with ~~fr~~ the frontal

sinuses and separating the two orbits by a distance
of about 1/2 an inch. This character is a
result of the relative smallness of the eyes
before noticed.
3. The foramen magnum instead of being suborbicular
or subquadrilateral as in other birds, is as it were
double being ~~twice~~ 1 ¾ times as long vertically as it
is wide, and contracted in the middle.

66: Notes (D-027) [19]

Charleton in his Onomasticon p. 114 & Excercitationes
p. 117. says that a head of the Dodo existed in his
time in the ~~M~~ museum of the Royal Society, but
there is no doubt that this was the head of an Albatross.
See Grew's Catalogue of that museum. p. 73.
He does not mention the leg.

67: [pasted on same page] (D-028) [in pencil]

James Savery b. 1545. d. 1602
Roland Savery ^ $^{\text{son of last}}$ b. 1576. d. 1639
John Savery, nephew of ~~[?]~~. $^{\text{Roland}}$ b. 1590
Solomon Savery. b. c. 1601. engraver
Painters [in margin]

68: Notes (D-029 to 035) [20]

. 14. The metatarsal of the
hind toe of the Dodo is remarkably broad at its
distal end, and has (to use Prof. Owen's words) "a
peculiar twist $^{\text{back-}}$~~out~~wards and outwards, so as to form
a bridge or pulley against which the flexor
tendon of the hind-toe plays." ~~The~~ A somewhat
similar structure ^ $^{\text{which exists}}$ in the $^{\text{(Haliatus)}}$ Eagle, [?] might indicate an
~~employed in proof of the~~ ~~$^{\text{supposed}}$~~ affinity ~~of~~ ^ $^{\text{between}}$ the Dodo
[?] $^{\text{and}}$ the birds of prey, were it not that we find
the same ~~structure~~ $^{\text{character}}$ repeated ~~still~~ ^ $^{\text{far}}$ more accurately
in the Pigeons. Fig represents the posterior
metatarsal in the Treron phœnicopterus, and Fig
in the Dodo, and it will at once be seen
that the two structures are ^ $^{\text{almost}}$ perfectly identical
15 The form of the upper extremity of the tarso-metatarsal
[?] is almost ~~identical~~ $^{\text{the same}}$ in the Dodo & in the Pigeons.
and very unlike what we find in the Raptores

In most birds the gastrocnemius or great extensor
muscle of the tarsus, is attached in the first place
to two calcaneal processes a greater & a lessr. ^ immediately below the

[21]

joint of the heel, and is further expanded into an
aponeurosis which covers the hind surface of

the tarso-metatarsal for nearly its whole length.
Between these two calcaneal processes pass the
flexor tendons of the ^ anterior toes, [~~?~~] but the manner
of their arrangement is very different in different
groups. In the birds of prey great ^ use & strength is
required in the flexors of the toes, and we hence
find ~~the~~ a wide and deep channel between
the two calcaneal processes, through which passes
the whole bundle of flexor tendons of the anterior
toes. This ~~same~~ great development of the flexors
in the Raptores is ^ further indicated by a deep longitudin
=al groove along the whole length of the
hinder surface of the tarso-metatarsal, giving a ^ somewhat lunate ^ or subquadrate form to
the transverse section of this bone (Fig.)
But in the Rasorial birds and the pigeons the flexor
tendons of the toes are much more slender, allowing
of a near approximation of the two calcaneal
processes, which are connected together by one or
more osseous bridges, with intervening perforations for
the passage of the tendons. In the common fowl
after removing the gastrocnemius from the calcaneal

[22]

process we find in a hollow between these three
tendons, viz the flexor perforatus of the outer &
the middle toe, and the flexor perforans et perforatus
of the middle toe. ~~Below~~ [~~?~~] ^ anterior to these is a layer or
bridge of ~~tendinous~~ cartilaginous matter covering the flexor
perforans and flexor perforatus of the inner toe
* Note.

* The flexor perforans of the hind toe passes on
the outside of the lesser calacaneal process.

On removing these flexors we come to an osseous
bridge covering a ^ second perforation, through which passes
a large tendon ^ (flexor communis digitorum which near the [~~?~~] commencement
of the toes trifurcates and sends a perforating
flexor to the extremity of each of the
anterior toes. Thus the flexores digitorum are
~~separated~~ grouped into 3 fasciculi, separated [~~?~~] by two
bridges, the [~~?~~] anterior one osseous & the ~~outer~~ ~~tendinous~~, posterior cartilaginous
[?] the Pigeons the tendons are arranged in nearly the same manner.
^ In some of the ~~Pigeons~~ genera, (Chalcophaps) these ^ dividing bridges
are as in Gallus, one osseous, the other tendinous,
but in other genera (Treron ^ Columba,) both bridges
are osseous (Pl. IX. ^ Fig. ^ 29, 35.) and we consequently find two
perforations in the tarsal disc. It is also to be observed

[23]

16. If we proceed to examine the recently
dissected skull of the Dodo we find a
variety of characters which indicate its
Columbine affinities. Among these I may
mention the absence ^ or non-development of a vomer and of a bony

septum to the nostrils.
Accipiter ^ Secretarius, ~~Percnopterus~~ Neophron
Haliaetus ^ Vultur &c
In most Rapacious birds (Gypaetus) the bony septum of the nares is
generally ^ continued upwards from the palatine fissure to the
intermaxillary bone, greatly extending the surface
of the narial membranes and consequently increasing
the olfactory powers ^ Exceptions however occur, such as Cathartes in which the In the Insessores the bony
septum is
nostrils are pervious. not only destitute of a septum but are externally pervious
generally absent, but in some of the more rapacious
Podargus Dacelo Rollers Kingfishers Hoopoe Drepanes
forms such as the Shrikes ^ it is ~~considerably~~ more or less
and even in Coccothraustes
developed, in accordance with the demand on the
or on the mechanical strength of the beak
sense of smell. ^ In the Waders also the septum
is usually wanting and in many of them ^ the
nostrils are seen to be externally perforated
from one side to the other. Rallus Yet even here
we find examples, as in the Snipes & Woodcocks,
which obtain their prey by boring in mud, where
the bony ~~nasal~~ septum is fully developed, and even
anchylosed to the ethmoid bone, thus apparently
preventing all motion of the upper mandible.
But in ^ the Gallinaceous birds and in the Pigeons,
[...] granivorous habits require a very slight

[25]

amount of olfactory sensibility, the vomer and
nasal septum seem to be always absent ^ or rudimentary and
in the Dodo we find no trace of any such
structure.
17 In the Pigeons and most of the
[?] Grus, Hæmatopus Tringa Parra Balearica &c
wading birds ^ the nasal fissures are remarkably
long and narrow extending from the distal
third or fourth part of the beak quite to the
frontomaxillary suture
~~lachrymal bones and ^ to the elastic junction between~~
~~the upper mandible and the interorbital~~
~~portion of the frontal bones.~~
~~region~~. but in the Raptores, the Insessores
and the ^ true Gallinaceous birds (except Pterocles) the nasal foramina
are broad, oval, and comparatively short, allowing
of a large expansion of the nasal bones ~~between~~
at their posterior margins. In the Dodo
however the nasal ~~foramina~~ fissures are carried back
as far as in the Pigeons and Waders, ~~completely~~ viz. to the
line of junction between the upper mandible &
~~separating the narrow nasal bones from~~ the
the cranium.
~~ascending process of the intermaxilla~~ries.
18. The posterior facet ~~angular process~~ of the lower
jaw in the Dodo is ~~triangular~~, an ^ irregular isosceles triangle the ~~sh~~ base of

the triangle being external, the surface slightly
concave & the angles rounded. The same is the case
in the pigeons, but not in the waders or
gallinaceous birds. The posterior angular process ^ wh is very characteristic of the [?]
undeveloped in the Dodo & in the Pigeons.

[26]

19. In most birds the zygomatic bone is in nearly the
same ~~straight line~~ ^ ~~plane~~ straight line as the ^ palatine margin of the ~~upper~~ superior
~~(~~maxillary bone~~)~~ a character very conspicuous in the Vultures
~~mandible~~ ^ but in the pigeons these two bones form an
~~considerable~~ obtuse angle (about ^ 145° to 155°) with each other. The
rami of the lower jaw partake in a corresponding flexure.
In the Dodo a similar angularity is seen, amounting
to about 160°. This character is owing to the zygomatic
bone being attached to the ~~intermaxillary~~ ~~superior~~ nasal bone (in the Dodo
& the Pigeons) considerably above the plane of the palate,
while in other birds the attachment is effected
nearly in that plane. There is consequently a ~~sloping~~
surface of the bone ^ sloping downwards, in the Dodo & the Pigeons, between
this point of attachment & the palatine bones,
which is received between the rami of the
lower jaw. ~~In the Pigeons the surface of the~~
~~superior maxillary, external to the palatine bones~~
~~slopes upwards & outwards, & is received between~~
~~the rami of the lower jaw~~.
20 The palatine bones in the Dodo are ^ much more conformable ~~more like~~
to those of the Pigeons than ^ to those of the Gallinaceous, ^ Insessorial
& Raptorial birds. Conformably with the compression of
the head, the palatine plate is narrow, the buccal
plate shorter but deeper than in Pigeons, [~~?~~] posterior angle
~~projecting~~ rounded off, not projecting as in Insessores, nasal
plate moderately developed

69: Translation of Brandt (1849) (D-036 to 038) [29]

Translation of a memoir in the Bulletin de la Classe Physico-mathématique de l'Acad. Imp. des Sciences de St. Pétersbourg
t. VII. p. 37. (Read Dec. 17. 1847) Published Feb. 28. 1848.

70: Cuvier on the Dodo (D-039) [30]

Cuv on Dodo. 1830 Bones said to be Dodo from Mauritius – cranium
sternum humerus tarsus – Sternum has median process like Gallinae
Cranium also like Gallinæ Tarsus has processes corresponding to 3
fingers & a thumb. [NB no mention of any peculiar structures such
as we now know of in the Oxford Dodo.] Humerus [?] as short
showing that the animal make no use of its wings. Cuv refers it to
the Gallinæ. The sternal crest indicates strong pectoral muscles. [perhaps
[?] fighting with, not of course for flying ^ as the solitaire is [?] to [?]] Edin Journ Nat Sc
vol. 3. p. 30. – Bull. Sc Nat. v. 22. p. 122 Ann. Sc. Nat. v. 21.p. 103.

There is one remarkable point in the short

notice of these bones which Cuvier has left us,
and which may seem ~~to~~ opposed to the conjecture
that they belong to the Solitaire of Leguat.
He states that the sternum has a medial ridge like
that of Gallinaceous birds. ~~The humerus and fore~~
This of course indicates a considerable development
of the pectoral muscles. The humerus and fore-arm
however were short and appeared incapable of flight.
This apparent inconsistency between the sternal and
~~brachial~~ alar structures is nevertheless reconcileable with
the account of Leguat, who tells us that the wings
of the Solitaire though useless for flight, were employed
by the bird in self-defence, for which purpose considerable
strength in the pectoral muscles would be requisite.

71: Transcription of Holme (1688) (D-044) [33]

Extract respecting Dodo from "The Academy
of Armory by Randle Holme. Chester A. D 1688
Book II. ch. 13 fig 19.

72: Translation of Nieuhof (1682) (D-047) [40-41]

Translation from Nieuhof's "Brasiliaense zee en Lantreize. Amsterdam
1682. (Notes and Queries, vol. 5. p. 515.)

Published Sources

Strickland 1848

73: Letter from Hugh Edwin Strickland to George Corsane Cuninghame (quoted in Strickland 1848, pp.94-96):

To the Honorable Mr. G. C. CUNINGHAME,
Port-Louis.

OXFORD, NOVEMBER 1846.

SIR,

Sir W. C. Trevelyan has lately communicated to me a letter from yourself to him, giving an account of your endeavours to obtain further evidence as to the fossil bones found some years since in Rodrigues. I am happy to find that a communication of mine respecting the *Dodo* and *Solitaire* which Sir W. forwarded to you has been the means of calling your attention to the subject, and though your efforts have as yet been unsuccessful, yet from the zeal which you have shewn in the cause of science, I feel little doubt as to your ultimate success. I consider it as certain that some 200 years ago the three islands of Mauritius, Bourbon, and Rodrigues were each inhabited by a different species of large bird deprived like the Ostrich and Apterix of the power of flight. Of these, the best known is the *Dodo*, two sculls of which exist, one at Copenhagen, the other at Oxford. The description and figure of the *Solitaire* of Rodrigues given by Leguat in his very interesting Voyage are so exact and circumstantial as to leave no doubt whatever of the veracity of his relation. The same may be said of the "*Oiseau Bleu*" of Bourbon, described in a manuscript Journal belonging to the Zoological Society. The grand desideratum now is, to search in each of these islands for any fragments whatever (no matter how small or broken) of these extraordinary and extinct birds. The success which has attended Professor Owen's examination of the bones which have been sent him from New Zealand is very encouraging.

He has now ascertained the former existence in that Island of at least 8 species of gigantic birds, belonging to two different genera, but all of them resembling the *Dodo* and the *Solitaire* in being unable to fly. These are fully described in the Transactions of the Zoological Society. If you have access to that excellent work, the *Penny Cyclopaedia*, you will find under the article *Dodo*, a full account of all that is yet known of that bird and of the *Solitaire*. It is in the newest and most superficial deposits of Mauritius, Bourbon and Rodrigues that search should be made for bones of these birds. As they were favourite articles of food, when the Islands were first colonized, it is probable that remains of them might be found in old neglected mounds of rubbish and ashes near town and villages. Where-ever excavations are made for foundations of houses, wells, roads, harbours, or other purposes, attention should be given to the substances turned up, and any bones should be carefully laid aside for examination. The cliffs where the sea washes them away, the sides of ravines, the beds of watercourses, and the soil often covered with stalagmite, which forms the floors of caverns, are all likely localities to furnish remains of these birds. It might be the means of drawing attention to the subject, and of proving to the inhabitants of the three Islands the great interest which European Naturalists take in the subject of the *Dodo* and its allies, if some extracts from my published paper (sent you I believe by Sir W. Trevelyan) or from this letter, were inserted in the newspapers of Mauritius and Bourbon.

In Rodrigues it may be well worth while to excavate the floor of the two caverns mentioned to you by Capt. Kelly. Of course also it would be most desirable to identify the locality where the bones were procured some years ago, as it would hold out the best hope of finding more.

I feel confident, from the interest which you take in the subject, that you will forgive my freedom in thus addressing you, and am, Sir,

Your most obedient and obliged servant,
H. E. STRICKLAND.

Cuninghame 1848

74: Letter from George Corsane Cuninghame (quoted in Cuninghame 1848, pp.91-93):

To the Secretary of the Society of
Arts and Sciences of Mauritius.

PORT LOUIS, 22D MARCH 1847.

SIR,

In consequence of enquiries made when I was last in England, about the remains of antediluvian animals which had been sent to Europe from this Island, I, in the beginning of October 1845, made up, for the guidance of Capt. Kelly of H. M. S. *Conway* and of Mr. Halkett, Aide-de-Camp to His Excellency the Governor, who were about to proceed to Rodrigues, a note of the information which it was in my power to obtain, regarding the places in that Island where it was understood the fossil bones alluded to had been found.

The search was not attended with success in its main object, no such remains having been discovered; and it seems doubtful whether the caves visited by these gentlemen were really the places where fossil remains had formerly been collected, but I sent home to Sir Walter Trevelyan a detail of the proceedings, hoping that from him or from Mr. Strickland some further information might reach me to guide in any future search.

I have lately received letters from both of these gentlemen, who, in some degree abandoning the field which was the subject of former correspondence, strongly advise a search in *this* Island. But for the duties which detain me constantly in Port Louis, I should have used my personal exertions to work out Mr. Strickland's views; but that not being in my power, I lay before you his letter and its enclosures, in hopes that some of the members of this Society may take an interest in the matter and be induced to institute an enquiry.

From Mr. Strickland's communication there appears to be now no doubt of the former existence in this Island of the Dodo (the *Didus ineptus* of LINNŒUS), a species quite distinct from the *Didus Solitarius* of Leguat and Gmelin, which certainly existed at

Rodrigues so late as 1693. And it further seems evident from the authorities quoted by Mr. Strickland, that there were in the Island of Bourbon in 1670 two species of apterous birds, one of which nearly resembled the *Didus Solitarius* of Rodrigues. The other differed from it chiefly in colour, but while the former is described as *not flying much*, and as being taken, like the Ostrich, by coursing it, the other is stated not to have been able to fly at all.

The researches of Mr. Strickland seem to have ascertained that about 200 years ago, the Islands of Mauritius, Bourbon, and Rodrigues, were each inhabited by a different species of large struthious bird, whose wings were insufficient to support it in the air, but greatly assisted its rapid motions on the ground. It would appear that there was, besides these, another large and somewhat similar bird at Mauritius, and another, still different, at Bourbon.

Three of these birds, or perhaps four, were of a form approaching to that of the Turkey, while one, the Dodo, judging from the remains which exist, was rather of the form of the Duck, having a large head, with short, thick, curved neck. Of the whole, *it* (the Dodo of Mauritius) is the best known. Besides prints and drawings of the animal when alive, and numerous not exactly authenticated portions of it, one perfect scull of this species exists at Oxford and another at Copenhagen.

What is now chiefly to be desired is, that these Islands be searched for remains of these extraordinary birds; their bones and even fragments of them, however small, ought to be carefully preserved for examination. It is in the newest and most superficial deposits that search will most probably be successful. "As they were favourite articles of food when the Islands were just colonized," it has been suggested by Col. Lloyd, whose knowledge of the Island is extensive and accurate, that neglected mounds of rubbish, such as Mr. Strickland alludes to, do probably exist in the neighbourhood of "*Old Mahebourg*," and that is a place where such remains are likely to be found.

I have the honor to be,
Sir,
Your most obedient servant,
GEO. C. CUNINGHAME.

Anon. 1848

75: Proceedings of the Royal Society of Arts and Sciences of Mauritius (quoted in Anon. 1848b, pp.xiv-xv):

The Secretary [Louis Sulphice Bouton] read a letter from Mr. Corsane Cuninghame, on the subject of the Fossil Bones of Birds, now extinct, but which formerly existed in the Islands of Mauritius, Bourbon, and Rodrigues. This communication was accompanied by a letter from W. C. Strickland, Esq., M.A., Oxford, enclosing Extracts from a Treatise published by him "on the evidence of the former existence in the Islands near Mauritius of Strathrous Birds distinct from the Dodo," and also "Extracts from the voyage of F. Leguat, to the East Indies in 1691;" and expressing his anxious wish that endeavours should be made to obtain remains of these Birds. An enquiry and search made at Rodrigues by Capt. Kelly, of H.M.S. *Conway*, at the request of Mr. Cuninghame, having proved unsuccessful, Mr. Strickland points out what he considers the best method of discovering the remains and the places where the search will most probably be successful. Lieut. Col. Lloyd having suggested the deserted fortifications of Grand Port, and the mounds of earth thrown up in the formation of the works there, as a very likely place, Mr. Cuninghame lays these papers before the Society, in hopes that some of the Members may take an interest in the matter. The Society receive these communications with interest, and recommend the subject to the attention of the Members. On the suggestion of the Secretary, it was agreed, that the specimen of Fossil Bones, in the Society's possession, which are believed to be referable to the extinct Birds, be sent to Mr. Strickland, and directions were given to the Curator of the Museum to prepare and deliver them to Mr. Cuninghame, for transmission.

Anon. 1856

76: Anon. 1856 Rare Birds, *The Illustrated London News*, vol.xxix, no.821, p.303 (Saturday September 20 1856).

> RARE BIRDS.
>
> (*From a Correspondent*.)
>
> WHEN I was staying with a friend a few days ago he showed me some old drawings, which he told me were made by an artist in Persia, representing the birds of that country. Amongst them was one containing five or six species of water-fowl, all of them common to the north of Europe and Asia, well drawn and accurately coloured, although somewhat faded by age. The two birds, of which I send you an accurate copy of the same size as the original, are in the foreground. They represent the *Anser ruficollis* (as any ornithologist will at once recognise), and an unknown species of Dodo, differing considerably from that which formerly inhabited the Isles of Bourbon and Mauritius in the form and colour of the beak, wings, and tail plumes, as well as in the texture and colour of the plumage, but still bearing strong general resemblance to it. Its appearance is so singular that I should at once have supposed it to be the creature of the artist's imagination, had it not been surrounded by a number of other figures of well-known species; and it it certainly not a little odd that one purely ideal bird should be introduced amongst a group of real ones.
>
> I should be glad if any of your ornithological correspondents can throw any light on the matter.
>
> The bird figured in company with this nondescript is an inhabitant of northern latitudes; but, as it is a bird of passage, with an extensive range, this does not prove that the artist intended to intimate that his Dodo was also a northern bird, though he must have probably been an inhabitant of a much cooler climate than his congener of the Isle of Bourbon. I remain, &c., _
>
> WM. W. COKER.
>
> Hortley Lodge, Parkstern, near Poole, Dorset.
>
> We have been favoured by Mr. Gould, the distinguished ornithologist, with the following note upon the preceding communication:–
>
> "The drawing which you have sent for my inspection is not without interest. The front figure is a good representation of the *Anser ruficollis*; the other appears to me to have been taken from an Albino or white variety of the Dodo. Now, as everything pertainable to this extint bird is regarded with great interest, I think it desirable that a drawing of the same size should be published in the ILLUSTRATED LONDON NEWS. The *Anser*, doubtless, sometimes visits Persia; but I should suppose that the artist had made his sketch of the Dodo from a Mauritius or Bourbon specimen, for we have no evidence that this bird was ever found elsewhere."
>
> RARE GOOSE, AND WHITE DODO, FROM DRAWINGS MADE IN PERSIA.

[For illustration see Parish (2013, fig.4.23)]

Anon. 1865

77: Anon. 1865 Science. Societies, *The Athenæum*, N° 1991, p.893. [Meeting of the Zoological Society, 12th December 1865]

> Mr. A. Newton read a letter addressed to him by Mr. H. O. Clark, announcing the discovery of the remains of some bones of the Dodo in Mauritius.

Barkly 1865

78: Barkly, H. 1865 Mauritius (From the *Commercial Gazette*, April 7.), *The Brisbane Courier*, 6th July 1865, p.5 (National Library of Australia http://nla.gov.au/nla.news-page52166):

> At a meeting of the Royal Society of Arts and Sciences, held on the 29th of March [...] the secretary, his Excellency the Governor, Sir Henry Barkly, made the following remarks

advantage had been taken of the.recent cruise of H.M.S. Rapid to send a collector from the museum among them. In a brief visit bf only a few hours' duration to Rodrigues, one of their members; Mr. Edward Newton, had not only.disinterred the fossil bones of what he considered a Dodo (Dido Solitarious), but had obtained two species of birds new to ornithologists;

Clark 1865

79: Clark, G. 1865 The Dodo, *Commercial Gazette* (Port Louis, Mauritius), 15th November 1865.

The Dodo.

We presume that most of our readers have seen the picture of an odd looking bird, bearing a very odd name: the Dodo. Old travellers state that this curious creature once existed in great numbers. in Mauritius. It was about the height of a large turkey, but very much more bulky, weighing fifty pounds, or more. This unwieldy bird was mounted on stout dumpy legs, and its wings were mere rudiments of those organs, so that it is not likely it ever made any attempt at flight. Its head was large, with a long and very stout beak, curved at the tip like that of the petrel. It is represented as destitute of a tail, properly speaking, but furnished with a plume of curling feathers, somewhat like those of the ostrich, on the hinder part of the back. Several good paintings of this bird, by Dutch artists, are in existence: one in the British museum, one at the Hague, another at Berlin, and another at Vienna. Mention is also made of the exhibition of a living specimen in London, about 1640. But notwithstanding all these evidences of the existence of such a bird, the fact would have been doubted, had not some remains of it confirmed its truth. These remains wore but very few. A head in the museum at Copenhagen, a head and a foot in the Ashmolean museum at Oxford, and a foot in the British museum, attested that a bird unlike any known existing species, and resembling, in some degree, the paintings mentioned, had actually furnished those remains, and been the subject from which the portraits were taken. Several of the early voyagers who visited the island now called Mauritius spoke of the birds, and not only feasted on their flesh during their sojourn there, but salted them in numbers for their sea-stock. It is stated that they sometimes took as many as forty of them in a single hunt. Neither tradition nor history records their existence in this island after it had received the name of l'Ile de France. If the Dutch, on abandoning the island, left any there, they were probably exterminated by the maroons, who were its only inhabitants till the French settled there. No naturalist formed part of the crews of the various ships which touched here during the existence of the Dodo, and the accounts given of it are vague and unsatisfactory. Taste must not be disputed;

and we may therefore receive as of equal value the accounts of those who extol and those who decry the flesh of the Dodo. The difference between an old gander and a Michaelmas gosling is sufficient prove that both may have been right in their statements.

After the island had resumed its name, Mauritius, diligent enquiry was made both as to the traditional existence of the Dodo, or of the actual existence of any remains of it; but both were alike fruitless, though distinguished naturalists, both creole and european, undertook the search. So great was the interest in the history of this non descript bird, that about twenty years ago a large volume compiled with vast labor and illustrated with elaborately executed engravings was published on it by Mr. Strickland; and this volume was the means of assuring Mr. Clark that the bones he has lately discovered were really and truly those of the Mauritian Dodo, *Didus Ineptus*.

Mr. Clark, during a very long residence here, had made many enquiries and researches in order to learn something more about the Dodo than was already known generally, or to find some remnants of it, but without success.

On Dr. Ayres's last visit to Mahébourg he conversed with Mr. Clark about the Dodo, and asked whether by digging round the ruins of the old Dutch settlement, there might not be a chance of meeting with some remains? Mr. Clark did not see any probability of success in that quarter, as these dwellings were situated on a spot where nothing would be likely to bury itself in the earth, of which the surface is every year swept completely by the water which flows from the mountains; but he said he thought a likely spot to contain such remains would be in alluvial deposits. A few days after, Mr. C. remarked that some marshes in the vicinity of Mahébourg were likely to furnish these coveted remains; but having neither time nor means at his disposal, he did not undertake the search, though bearing in mind his impression on the subject. The commencement of the Railway works, with their numerous cuttings at various heights, gave hopes to Mr. Clark that some remains may be discovered; but his enquiries from those employed there on this subject failed to elicit any information.

About two months ago, Mr. Gaston de Bissy caused to be dug from a marsh on his property, known as "La Mare aux Songes," the alluvium contained in it, to use as manure. After digging two or three feet, the men came in contact with bones of tortoises and deer, the former in vast numbers. As soon as Mr. Clark heard of this, he went to Mr. de Bissy and stated to him what had long been his opinion as to the position in which Dodo's bones might be found, requesting him to give orders to the diggers to lay by carefully whatever bones they might turn up. Mr. de Bissy was much pleased with the chance of making so interesting a discovery, and at once ordered that Mr. Clark's request should be fulfilled. Mr. C. visited the estate many times, but without obtaining any satisfactory intelligence. He at length engaged two men to enter the dark colored water, about three feet deep, and feel in the soft mud at the bottom with their feet. In a short time he had the inexpressible satisfaction of finding a broken tarsus, an entire tibia and part of another. He at once commenced operations in earnest, and has been fortunate enough to find every important bone of that remarkable bird, including cranium, upper and lower mandibles of bill, cervical and dorsal vertebræ, ribs, coracoid bones, scapulæ and clavicle, sternum, humerus, ulna, pelvis, femur, tibia and tarsometatarsus, so that experienced person can well build a Dodo from these remains, the toes being the only part wanting.

The skull of this bird was of amazing thickness, and the cerebral cavity very small. The beak of great strength and solidity, as are the condyles of the lower mandible. Some of the cervical vertebræ are more than two inches in diameter, and of very elaborate structure. The sternum, of which the form shows a strong resemblance to that of the pigeon tribe, in some specimens is more than five inches wide and seven long. The keel is a quarter of an inch thick, and about an inch deep in the deepest part, which is at the centre; and the sternum is there three quarters of an inch in thickness, but it thins off to a sharp edge at the margin. The humerus is less than four inches in length, and the shaft only about three eigths of an inch in diameter, and the ulna, under three inches, and less than a quarter of an inch in thickness. Some femurs are nearly seven inches long and more than an inch in diameter, and tibiæ nine inches long, and the upper condyles two inches in diameter. The tarsometatarsi are of very solid bone, and have been found in greater numbers than any others. They are about the length of those of a good sized turkey, but more than twice the thickness. Only two or three craniums have been found, with a few fragments. The paucity of these remains as compared with other parts of the frame, may very possibly arise from the numerous apertures in the head, into which roots insinuated themselves, thus disintregrating the structure. The upper mandible of the bill has suffered from the same cause, and only two tolerably perfect specimens of that organ have been obtained, while the under mandibles are numerous; but only three or four have been found in which both rami remained attached. The tip of one upper maudible [*sic*] is two inches in depth and an inch in thickness. The vertebræ are very strong, and shew that the spinal cord was fully double the size of that of the turkey.

In only one instance has the presence of a fragment of the furcula been found attached to the coracoid bone, but seyeral [*sic*] have the scapula united to them.

These bones present a great diversity of colors. Those which were found near the springs in the marsh are nearly of their original hue. Some found alongside of a large bois-de-natte tree were nearly of the color of that wood, and many others are nearly as black as ebony.

The quantity of tortoise bones found here is truly astonishing: they would more than fill a large cart. Some of the femurs are more than three inches in diameter. Mr. Clark believes that these bones belong to two species of tortoise.

Several flamingo bones, including humerus, ulna, radius, tibia and tarso meta tarsus have been found, but not a single femur. Two upper mandibles and one lower of that singularly formed bird prove the identity of the other bones found in juxta position with them.

Bones of the egret curlew, moor-hen and sand lark have been found in great numbers, and many deer's bones, including a skull with the horns attached, and the jaw of an old sow, of great strength but very small size, have also been turned up.

It is remarkable that the bones of the tortoises and deer were found in the comparatively compact peaty soil, overlying the soft mud which contains the bones of the Dodo, of which none are found in the upper stratum. This accounts for none of the latter having been discovered by those who were digging for manure.

Mr. Clark deposited the first specimens of Dodo's bones he obtained in the Museum at the Royal College, as well as those of the flamingo, the existence of which in Mauritius was remembered by the parents of persons now living. He has also sent a complete set of Dodo's bones to Professor Owen, for the British Museum.

It is probable that a search in marshes of this nature in Reunion and Rodrigues, might lead to the discovery of remains of the large extinct birds believed to have been indigenous in and peculiar to those islands.

"La Mare aux Songes" is a spot singularly propitious for the haunt of the animals of which the bones have been found there. A sheltered glen clothed with thick wood in the memory of persons still living, with two springs in it, and so near the sea as to be a convenient refuge in stormy weather for flamingoes and curlews.

Seueral [*sic*] other marshes have been tried for such remains as those contained in it, but thus far without any success.

Anon. 1866

80: The Sydney Morning Herald, 11th January 1866, p.3 (National Library of Australia http://nla.gov.au/nla.news-page1471337):

THE DODO.–An almost perfect skeleton of the Dodo has just been discovered at the Mauritius. It was sent to England by the last overland mail steamer for exhibition at the British Museum.–Correspondent of the *Argus*.

Anon. 1866

81: The Brisbane Courier, Saturday, November 24, 1866, p.5 (National Library of Australia http://nla.gov.au/nla.news-page54819):

DISCOVERY OF THE BONES OF THE SOLITAIRE, THE EXTINCT DIDINE BIRD OF RODRIGUES.

A PROBLEM most interesting to ornithologists and naturalists in general, was solved last year by the discovery of the remains of the Dodo, which proved that most curious bird to have more affinity with the pigeon tribe than with any other. It is true that a foot and a head of the Dodo, in a fair preservation, existed, as well as some drawings of it, which were supposed, as has now been proved, to give a just idea of the form and proportion of that extraordinary bird. But these did not give such indications as might suffice to determine its genus, which was only decided by the remains found in *Mare aux Songes*. The description of the Solitaire by old writers was about equal to that of the Dodo; but no faithful or even plausible drawing of it remained; and the few bones which had been obtained only sufficed to give some idea of its height, without any mention of its breadth, much loss of its genus.

The Honorable Edward Newton, so well known for his zeal in the cause of science, and his knowledge of ornithology in particular, having visited Rodrigues, found several well preserved bones of the Solitaire in a cavern in that island, and felt encouraged to undertake further search. Having placed means for effecting this in the hands of Mr. Jenner, the Police Magistrate there, that gentleman set heartily to work to cause the caverns to be explored, and his efforts have been perfectly successful. He arrived here about ten days since with a large quantity of bones of various descriptions, which were found buried in the calcareous soil with which the bottom of the caverns is covered, at a short distance below the surface. These bones comprise nearly all those of the Solitaire, of which two almost complete sets were found together. There are several upper mandibles, but only a portion of a lower one. These prove the beak to have been very much smaller and less massive than that of the Dodo, but are much like it in form.

The skull is broader than that of the Dodo; but singularly flattened vertically. The orbits are scarcely so large as those of the Dodo, and the cerebral cavity much the same. The vertebræ are rather larger than those of the Dodo, and not quite so stout. The sternum is smaller than that of the Dodo, but the keel is fully as deep. The coracoid bones and scapulæ are longer, but rather less massive, and no furcula has been found. The sternal appendages of the Dodo were found in a state better calculated to give an exact idea of the form of the bird than those of the Solitaire, several coracoid of the former having the scapula anchylosed to them, and two having both scapula and furcula. The humerus and ulna of the Solitaire bear the same relation as the other parts, those of the Dodo being rather longer and thinner. Some carpal bones of the Solitaire in excellent preservation have been found; these interesting members were not among the relics of the Dodo. They are about an inch and a half long, and as they complete the wing, give an exact idea of its length. The Pelvis is longer and narrower than that of the Dodo, and is also deeper. The femora, tibiæ and tarso metatarsi are a full third longer than those of the Dodo, with about equal bulk. No toes of the Dodo have been found, but a great number of those of the Solitaire have turned up, including the back toe; and they show a longer foot than the Dodo's, but of the same description.

These bones having been in such a situation as to allow of their being gathered up carefully, instead of being groped for in the mud, as were those of the Dodo found here, were not scattered in confusion like them, and the smallest bones in the skeleton were easily recovered. They are in excellent preservation, slightly tinged with ochreous yellow, and in a few there are little stalagmitic encrustations.

Among the bones of the Solitaire were found those of several other birds, some of which resemble those of the flamingo, found in Mare aux Songes; and a great number of Tortoise bones, none of which are nearly so large as those found with the Dodo's bones.

The following dimensions will give a good idea of the comparative height of the Dodo and the Solitaire. The measurements are of the largest specimens of each:

	Femur.	Tibia.	Tarsometatarsus.
Dodo–inches	6¼	9	5
Solitaire „	7 3-16ths	11⅛	11 1-16th

These proportions seem to indicate that the powers of locomotion of the Solitaire must have been greatly superior to those of the Dodo.

It is most astonishing that the extinct birds of Réunion, which existed long after the Dodo, and perhaps the Solitaire, had been extirpated, should not have found any one to describe or to delineate them, and that not a fragment is known to exist to confirm the traditions of their being. It is no more likely that their remains should be found in caverns in Réunion than those of the Dodo here; but there must surely be marshes in that island which are worth exploring. We believe the distingusihed [*sic*] naturalist, Dr. Coquerel, is shortly expected there, and we hope he may undertake the search in good earnest, and succeed in it.–*Overland Commercial Gazette*, October 6.

Owen 1867

82: George Clark to Richard Owen, 6th October 1865, page 125 (quoted in Owen 1867, pp.51-52).

On the estate called 'Plaisance,' about three miles from Mahébourg, in the island of Mauritius, there is a ravine of no great depth or steepness, which, apparently, once conveyed to the sea the drainings of a considerable extent of circumjacent land, but which has been stopped to seaward, most likely for ages, by an accumulation of sand extending all along the shore. The outlet from this ravine having been thus impeded, a sort of bog has been formed, called 'La Mare aux Songes,' in which is a deposit of alluvium, varying in depth, on account of the inequalities of the bottom, which is formed of large masses of basalt, from three to ten or twelve feet. The proprietor of the estate a few weeks ago conceived the idea of employing this alluvium as manure; and shortly after, the men began digging in it; when they had got to a depth of three or four feet they found numerous bones of large tortoises, among which were a carapace and a plastron pretty nearly entire, as also several crania.

When I heard of this, it immediately struck me that the spot was one of the most likely possible to contain bones of the Dodo, and I gave directions to the men working there to look out for any bones they might find. Nothing, however, was turned up but a fragment of what I supposed to be the humerus of a large bird. This encouraged me to look further; and my search was rewarded by the discovery of several tibiæ, more or less perfect, two tarsi ["one tarsi" in Hume *et al*. 2009, p.35], one nearly perfect pelvis, and fragments of three others.

These were found imbedded in a black vegetable mould, the lighter-coloured specimens being near the springs. My reasons for believing these to be remains of the Dodo are:– the certainty that that bird once existed in Mauritius; the similarity of these bones to what the representations of the Dodo which I have seen would lead one to expect, particularly the breadth of the pelvis, the stoutness of the tibiæ and tarsi, and the shortness of the latter; the favourable nature of the spot in which they were found for the haunts of such birds when living – a sheltered hollow with two springs in it; the non-existence, actual or traditional, in Mauritius of any bird to which bones such as these could have belonged; the indubitable antiquity of these bones, proved by the deposit of alluvium which covered them.

During nearly thirty years that I have inhabited this colony, I have made frequent inquiries of old people as to the finding of the bones of large birds, and have offered liberal rewards for such; and I have consulted with the late Dr. Ayres as to the spots most likely to contain them. We agreed that the floods which sweep the hill-sides and the ravines in the rainy season would be most likely to carry any remains into the sea; and this would doubtless have been the case here, but for the stoppage occasioned by the sand-down. George Clark. 1865.

The letter was endorsed with the following:

Having visited the place with Mr. Clark, I can vouch for the truth of the facts herein mentioned. William Thomas Banks,
Civil Chaplain,
Mauritius.

The Rev. W. T. Banks, Civil Chaplain at Mahébourg, in this diocese, and Mr. George Clark, Master of the Government School at Mahébourg, are well known to me, and deserving implicit credit for their statements as to matters of fact.
Vincent N. Mauritius. Oct. 6, 1865.

83: Vincent Ryan to Richard Owen, 7th October 1865 [the letter arrived in November, 1865] (quoted in Owen 1867, pp.50-51):

St. James, Port Louis,
October 7, 1865.

Mr Dear Sir, – when I had the pleasure of conversing with you for a short time in London two years ago, I promised to acquaint you with any facts or discoveries which might come to my knowledge, likely to interest you in connexion with Madagascar. I have not anything as yet to communicate definitely respecting that island in the way of natural history, but I have strong reasons to believe that a discovery has been made here recently which will gratify you very much. Mr. George Clark, who has for many years devoted himself to the work of teaching in. this island with great success, is an ardent student of natural history, and has explored many parts of the island in search of information on the subject. From careful observation he was led to conclude that no remains of the Dodo were likely to be found in any of our watercourses, because of their steep descent and the immense rush of water which sweeps down them at times. But he had also frequently expressed his opinion that in certain marshes, with high banks of sand between them and the sea, such remains would probably be found. In one of these places he has found several of the bones of the Dodo (as he believes), and is now forwarding them home for your inspection.

At his request, I write these lines to ask for your kind care of his interests in securing any reward which may accrue to him. It would be a great pleasure to me to find that his discovery was really important, and likely to be useful to himself; for he has pursued these and similar investigations with an amount of intelligence, skill, and diligence, in his vacation-times (by no means extensive), which deserves much credit and encouragement.

The book which you kindly sent me on the Aye-Aye has been read by many, and especially by medical men, with much interest. I entrusted the other copy to Mr. John Douglas for the Society here.

I remain, my dear Sir,
Your very faithful Servant,
Vincent N. Mauritius.
Professor Owen.

Gervais 1867

84: George Clark to Charles Coquerel, 31st December 1866 (quoted in Gervais 1867, p.262):

Vous avez dû apprendre que des restes du Solitaire, en nombre considérable et assez complets pour établir parfaitement l'apparence et les affinités de cet oiseau perdu, ont été trouvés à Rodrigue. La Société britannique pour l'avancement des sciences ayant voté une somme pour la recherche des restes des oiseaux perdus dans les Mascareignes, M. Newton, notre auditeur général, a envoyé à Rodrigue des coolies pour y travailler sous la direction de M. Jenner, magistrat de cette île, et ils ont trouvé, avec très peu de peine, à un ou deux pieds de profondeur, des os de Solitaire dans une terre calcaire très friable que forme le sol des nombreuses cavernes qui y existent. La facilité avec laquelle on a fait ces découvertes prouve que ceux qui avaient prétendu y faire des fouilles auparavant se sont donnés fort peu de peine. La position où se sont trouvés ces os, d'après ce que m'a dit M. Jenner, fait croire que plusieurs Solitaires sont morts sur les lieux où leurs restes ont été rencontrés, de sorte que leurs reliques n'étaient pas éparpillées comme celles du Dronte. Deux squelettes presque entiers ont été trouvés gisant l'un à côté de l'autre, et quelque différence de taille porte naturellement à faire supposer que ce sont ceux d'un mâle et d'une femelle.

[...] Le Solitaire a dû avoir un tiers de plus en hauteur que le Dronte et un grand tiers de moins en ampleur. Le crâne est beaucoup moins épais que celui du Dronte et moins bombé, et il est singulièrement aplati à la partie antérieure. Le bec du Dronte possède, d'après mon estimation *de visu*, un volume au moins six fois aussi fort que celui du Solitaire.

[You have learned that remains of the Solitaire were found in Rodrigues, in a considerable number and complete enough to perfectly establish the appearance and affinities of this lost bird. The British Society for the Advancement of Science having voted a sum for the search for the remains of the lost birds of the Mascarenes, Mr. Newton, our auditor general, sent coolies to Rodrigues to work there under the direction of Mr. Jenner, magistrate of this island, and they found, with very little toil, within one or two feet of depth, the bones of the Solitaire in a very friable calcareous soil which forms the ground of the many caves which exist there. The facility with which one made these discoveries proves that those who had claimed to excavate there before were given very little trouble. The position where these bones were, according to what Mr. Jenner said to me, makes me believe that several Solitaires died on the spot where their remains were met with, so that their relics were not scattered like those of the Dodo. Two almost complete skeletons were found lying one beside the other, and some difference in size naturally conveys the supposition that they are those of a male and a female.

[...] The Solitaire must have had a third more in height than the Dodo and a great third less in width. The cranium is much less thick than that of the Dodo and less convex, and it is singularly flattened at the anterior part. The beak of the Dodo has, according to my estimate *de visu*, a volume at least six times as much as that of the Solitaire]

Newton 1872, Owen 1872

85: Correspondence concerning the solitaire in *The Annals and Magazine of Natural History*, fourth series, vol.ix. Statement by Alfred Newton (Newton 1872b, pp.168-169):

MISCELLANEOUS.

Osteology of the Solitaire.

To the Editors of the Annals and Magazine of Natural History.

GENTLEMEN,–In a paper on the osteology of the Solitaire of Rodriguez, commuuicated by my brother, Mr. Edward Newton, and myself to the Royal Society, and published in the 'Philosophical Transactions' for 1869, there occurs the following passage relating to the remains of that bird which had previously come to the notice of naturalists:–

"In addition to these eighteen specimens, we are informed that in 1860 or 1861 a tibia, the shaft of a tarso-metatarsal, and some fragments of the shaft of a femur, all of which belonged to the Solitaire, were sent to Professor Owen by M. Bouton, of the Museum at Mauritius; but the fate of these specimens is unknown to us."

In a paper published a few days since in the 'Transactions of the Zoological Society' (vol. vii. part 7. p. 519, note) Professor Owen quotes the above-cited passage, and then, after printing a letter from the late Mr. James Morris, accompanying the specimens to which the information we had received referred, states what they really were, and continues as follows:–

"They were returned to the Museum at Port Louis, Mauritius. The first and sole evidence of Messrs. Newton's interest in these fragments reached me with their memoir. Any previous inquiry would have, at once and most readily, received the reply given in the present note."

Professor Owen makes this statement in error. Some time before our memoir was finished, and therefore before it reached him, my brother and I made personal and explicit inquiry of him as to the fate of these bones, concerning which we were naturally anxious to know whether we had been correctly informed. His "reply" was so vague as to compel us to be content with the guarded expression we used. It will be seen that the "reply" he has now given is not more satisfactory. It shows, indeed, that two of the three bones or fragments which we had been informed were sent by M. Bouton had reached Prof. Owen, had been rightly recognized by the former and "returned" by the latter; but it says nothing as to their "fate," which remains as "unknown to us" now as it was then. One thing is certain–that on search being made last August in the Museum at Port Louis, they were not forthcoming.

Fully appreciating the terms of general approbation in which Professor Owen has been pleased to mention our paper, the carelessness as to the fate of these particular specimens, whatever may have been their number or condition, which he imputes to my brother and myself is so great that I need not apologize for troubling you with the assurance that it has no foundation in fact.

I remain, Gentlemen,
Your obedient Servant,
ALFRED NEWTON.

Athenæum Club, Pall Mall,
January 10, 1872

86: Richard Owen's reply (Owen 1872, pp.241-242):

MISCELLANEOUS.

Osteology of the Solitaire.

To the Editors of the Annals and Magazine of Natural History.

GENTLEMEN,–Prof. Newton writes that he and his brother "made personal and explicit inquiry" of me "respecting the fate" of certain bones of the Solitaire.

Had this been so, I could not have forgotten the circumstance.

The Messrs. Newton called on me at the British Museum, in 1868, for the purpose of examining the bones of the Dodo; and the time at my command was spent in showing them those remains in one of the basement storerooms.

If this has escaped Prof. Newton's recollection, any incidental mention of the Solitaire's bones on that occasion, the only one in which I was favoured by their visit, may well have escaped mine.

The impression that no such inquiry had been made by the Messrs. Newton was fixed by their making no mention of such inquiry in their paper in the Philos. Trans. of 1863, from which I first learnt their interest in the subject, and satisfied it to the best of my knowledge; in giving which information (Zool. Trans. 1871, p. 519) no imputation of carelessness was made or intended.

RICHARD OWEN

87: Alfred Newton's response (Newton 1872c, p.321):

MISCELLANEOUS.

Osteology of the Solitaire.

To the Editors of the Annals and Magazine of Natural History.

GENTLEMEN,–Prof. Owen remarks on a statement in my former letter concerning an inquiry made of him:–"Had this been so, I could not have forgotten the circumstance." Now "this" *was* "so;" and I can therefore only regret his memory has so sadly failed him.

Whatever "incidental mention of the Solitaire's bones" might have been made "in one of the basement storerooms" of the British Museum, the particular inquiry in question was expressly put to him in his own room upstairs.

My brother, writing from Mauritius in December 1860, informed me that these bones had been sent to Prof. Owen; and when it became necessary for us to enumerate all the known remains of the Solitaire, we of course endeavoured to obtain particulars of them from him. To obtain these was one of the chief objects of our calling upon him at the time he mentions. He had previously by letter kindly made arrangements whereby we could examine the bones of the Dodo in the "storeroom," for which arrangements we thanked him.

Prof. Owen repeats the assertion that "he first learnt" our "interest in the subject" from our paper in the 'Philosophical Transactions.' This, as I have already said, is not the case any more than that he can have "satisfied" any inquirer into the fate of the specimens by the "information" he has given. His final disclaimer, in the same sentence, of intending any "imputation of carelessness" requires acknowledgment from me. I only wish it had been expressed sooner, but trust that, now made, it will end the matter.

I remain, Gentlemen,
Your obedient Servant,
ALFRED NEWTON.

Magdalene College, Cambridge.
9 March, 1872

Slater 1874

88: Slater, H. H. 1874 [Letter of Henry Horrocks Slater] Letters received from the Naturalists attached to the Transit-of-Venus Expedition at Rodriguez, *Proceedings of the Royal Society of London*, vol.23, pp.132-133. (December 17 1874. Article iv).

Government House, Port Mathurin,
Rodriguez, Nov. 2,1874.

DEAR SIR,–I write to give you a short account of my proceedings and success here so far, in my explorations of the Rodriguez bone-caverns.

I must confess to a more or less degree of disappointment on my first inspection of the caverns; and you will understand the cause, I think, when I inform you that out of thirteen caves which I found on my arrival, and which I believed till lately to be the only ones, twelve bore evident, and some recent, signs of previous digging. However, I set to work at once, and, with much diligent search, had found five new caves by the time that we had finished the first thirteen. Out of these I have reason to believe that, in three of them, no mortal foot has ever been previous to mine; for the mouths of all were closed up by a falling-in of the rock, and it was by this sign that I guessed at their existence. We had to work some time at all of them with a big iron mallet before entrance could be effected. In one of these caves I believe I found the bones of two Solitaires, without admixture of those of any other individuals. Of the truth of this I am pretty certain; for they were clearly the bones of a male and female which had fallen down into a cleft, from which egress to so unwieldy a bird was impossible.

Some of the bones had fallen into dust from exposure to the air, being only partially covered with sand, whilst others had been altogether removed, whether by water or not I could not say, for I found no trace of its action there. The same cause, decay, which had nearly annihilated others might have entirely removed these. I found amongst these about thirty rings of the trachea or tracheæ.

Since then I have found a small hook in another cave, to which it was difficult, from the small size of the entrance, to penetrate. Into this also a slit or cleft from the surface had led, but had since been obliterated. In this I found, I should say, seven "sets" of bones of Solitaire. These were more or less mixed up together by the action of water; but they were still, to a certain extent, in groups, each group being those of an individual. Amongst these I found a perfect skull, with maxillæ attached, and the three parts of the mandible lying close by, four perfect and several injured furcula, and many rings of tracheæ.

I propose soon to try my fortune in a small marsh near here, which looks as if it might originally have been a lakelet or pond. I am induced to do so by the success that my labours met with in a similar locality in Mauritius. I have said "near here," but this is a slip of the pen; I should have said "near my encampment at the caverns."

I have found an immense quantity of tortoise-bones, from which I shall only make a selection before leaving. I have also exhumed a great quantity of bones of smaller birds; but I rather hesitate before giving a description of their genera.

I am afraid that I cannot send any bones by this mail, as the difficulty of transport is so very great. I have every week brought back a few bones of Solitaire, but have had hardly any time to put even these in gelatine, without which operation they would not travel with any degree of safety.

I am, dear Sir,
Very obediently yours,
To Prof. Huxley. HENRY H. SLATER.

Slater 1879

89: Slater, H. H. 1879 Reports of Proceedings of the Naturalists. 2. Report of Henry H. Slater, Esq., B.A., *Philosophical Transactions of the Royal Society*, vol.168, pp.294-295. Differences from the manuscript text (Slater 1875, as transcribed in Hume et al. 2014) are noted.

2. REPORT OF HENRY H. SLATER, ESQ., B.A.

I LANDED in Mauritius August 4th, 1874. The Hon. Edward Newton kindly asked me to stay with him. My instructions directed me to take his advice as to my mode of procedure in Rodriguez, and accordingly I requested George Jenner, Esq., Director of Emigrants for the Grand Port District, to select for me nine good men and a cook.

This took some time and I regretted much that I was not able to leave for Rodriguez until September 9th, by the second trip of the "Shearwater." I was wishing at first, nevertheless, to sail without my men, had not Mr. Newton and Mr. Jenner (10 years magistrate of Rodriguez) assured me that I could do nothing without my men, and that the natives of Rodriguez were quite unreliable.

We landed in Rodriguez on September 14th, with our 10 men. Settled in Port Mathurin and stayed there for a day to allow the men to recover from the voyage, which had been stormy; Government House had been allotted to the naturalists as a residence and head-quarters, but two tents had been supplied from the "Shearwater," one of which was to be my habitation at the caverns. After this the weather was stormy for some days, so much so that it would not have been prudent to attempt the sea voyage to the caves, and no native would pilot one there; but afterwards the weather changed and I secured two boats, in which, upon the 18th of September, I carried my men, tent, stores, and tools down to the caverns. Owing to the roughness of the country, which is very hilly, it would have been impossible to have carried the stores, &c. overland, without many porters and great expense.

The 19th was occupied in establishing camp, in building a hut for the men, and in prospecting for caves, of which I found several. Next morning we started work: the caves had all been previously dug over, but I determined to dig them again, and to a depth of three feet, and we found a good many bones (mostly tortoise, but with some of Pezophaps) though they were in a bad state of preservation.[6]

I used to go out every evening to take my daily exercise and to shoot game (no fowls or goats could be got at the caverns, which part of the island is nearly uninhabited, so that it was necessary to shoot a supply of game), and on these walks I found all the caves.

This sort of work, *i.e.*, digging over caves second hand, continued till the 6th of October. I used to go home always on Saturday afternoon with the week's bones, stay over Sunday, and leave Government House for the caves on Monday morning in my canoe, carrying a week's rations for the men and my own supplies.[7]

On October 7th I found some new caves. These formed a branch of a cavern already dug, but as entrance to them was extremely difficult, they had hitherto escaped notice. In these we found a large quantity of Solitaire bones and the almost perfect skeletons of a male and female[8] mingled, including the rings of the trachea; very few tortoise bones were intermixed, and I found it an almost invariable rule, that where Solitaire bones were found in large numbers and apparently occupying the spots where they died, there were few or no tortoise bones amongst them.

After this I had varying success, sometimes getting a good haul and making valuable notes, sometimes doing nothing in either particular till October 23rd. On that day I was waiting for my head man near a curious ravine which we called "the Gorge," intending to make a survey of it with a view to new caves, when I noticed a small dark hole behind a huge block of coralline limestone. I peered in and found it to be a large cave which had been obliterated by a fall of rock; so when my Sirdar came, a thoroughly intelligent and enthusiastic man, we got a large mallet, and after reducing some huge blocks to movable fragments, gained entrance and found many bones, including one skeleton of Pezophaps which had evidently fallen into a cleft and had been unable to extricate itself; the bones being not quite covered with earth some had become quite decayed; indeed, had it not been that bones lying on the surface were always almost or quite decayed, I should have many skeletons of Pezophaps perfect.

On November 6th we found another virgin cave; it yielded about 24 crania, several quite perfect and with the beaks still attached, maxillæ, mandibles, and quadrates in their right places; and other bones in proportion, including many furcula, the auditory ossicles, plates of sclerotic, and the first phalange of wing, one of the few bones not already found.

After this, although vigorous search was continued, no caves were found of any value, all were disturbed by the action of running water, for some of the caves occasionally served as beds for subterranean rivers.

We dug for three days in a neighbouring marsh, about 450 feet above the sea level. Hitherto all the bones of Didus ineptus recently found have been discovered in the marshes of Mauritius, and I hoped that some result might reward a similar search in Rodriguez, but our work there was entirely ineffectual.

I never could find any traces of the stones mentioned by Lequat as invariably occurring in the stomach of Pezophaps, although I sought for them diligently; we used to pass all the soil found in the bottom of the more fertile caves through sieves, and nothing of the sort was found. Surely a stone which in 1693 was sufficiently hard and close grained to serve as a good whetstone for knives, should have survived as long as the fragile ribs and crania of the bird![9]

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[6] Slater (1875): "tho' they were in a bad state of preservation."

[7] Slater (1875) has the additional text: "By the way two of the men were allotted to Mesrs Balfour & Gulliver as porters, the cook was a joint possession of the three and the remaining seven were my gang of workmen, one of whom was sent back to Mauritius, invalided, after the first month."

[8] Slater (1875): "♂ and ♀".

[9] Slater (1875) has the additional text: "As to the time which their bones have lain there, and the time which has elapsed since their extinction, I have gained very few data of any weight: we know that they existed as late as 1760 from D'Heguerty's "Memoirs de la Soc: Royal des Sciences et des belles lettres de Nancy".

The last week I was in Rodriguez (December 9-15) was employed in packing up my numerous specimens.[10] It may be imagined that so many fragile bones would need a large quantity of some soft and elastic medium in which to pack them, but there was very little straw, no grass was to be had in the island, and I was reduced to great shifts. I finally put them temporarily in barrels, but when I unpacked them in Mauritius I was horrified to find that some of the most valuable specimens of all, which had been placed in sawdust, had, owing to the displacement of the sawdust, got mixed one layer with another; but I do not see that this will cause any real inconvenience.

I left Rodriguez on December 15th, and arrived in Mauritius December 19th; left that island for Réunion January 9th; Réunion for Europe February 6th; and landed in England March 10th.

90: Slater, H. H. 1879 Observations on the Bone Caves of Rodriguez, *Philosophical Transactions of the Royal Society of London*, vol.168, pp.420-422. Differences from the manuscript text (Slater 1875, as transcribed in Hume *et al*. 2014) are noted.

Observations on the Bone Caves of Rodriguez. *–By Henry H. Slater, B.A., Naturalist to the "Transit of Venus" Expedition.*

I. –The Cave Region of Rodriguez.

The cave tract in Rodriguez is situated about the S.W. side of the island, and is of a very curious nature. We find there 10 or 12 patches of limestone scattered upon the basalt which forms the island; these patches are of irregular form, and usually terminated by an escarpment of various height, from 3 to 10 or 12 feet, which marks their juncture with the basalt. On examination, these patches are found to consist of marine coral upheaved with the basalt.

Sometimes the limestone preserves its original structure or grain which it had in life; sometimes this grain is brought out by weathering, the outer walls or thecæ being harder than the rest, and standing out in relief when the rest is denuded away; sometimes, but more rarely, the septa are visible. But, as a rule, the limestone is much altered: whether by pressure during or previous to upheaval, or whether by an infiltration of acidulous water with carbonate of lime in solution, I must leave to more able geologists than myself to settle upon an investigation of my colleague, Mr. Balfour's, collection of rocks; but the stone is usually rendered very hard and solid, though always very porous. Sometimes weathering produces a quasi-oolitic grain on the surface.

It is in these coralline limestone patches solely that the caves are situated; in Bourbon, on the contrary, the only caves were in the igneous rock itself, and appeared to be the effect of rapid cooling.

The caves have been, if not originated, at least much enlarged by water, of which many bear abundant traces, and in the rainy season some are evidently the courses of underground streams.

As to the cause of their extinction, I am prepared to agree with the view given by the Messrs A & E Newton in their "Osteology of Pezophaps": they suggest wild cats and pigs at the exterminating cause: even now wild cats are extremely numerous in the Island. They are evidently escaped domestic cats, but are of very large size: even the guinea-fowl, that most wary of birds in the daytime, not infrequently falls a prey to them, and when we consider that the Solitaire had not the power of flight, we may imagine what damage this wily and blood thirsty animal could inflict upon the unwary young ones: pigs used to be very numerous in the island in the wild state, as even the "oldest inhabitants" told me.

I found in considerable quantities a large Helix and a large Pupa, both now extinct, amongst the bone earth: the former has been named H. Bewsheri after an individual in Mauritius who was one of the first to notice it. I give drawings of them in final report, and there are specimens in my collection, which will be delivered up with my bones."

[10] Slater (1875): "The last week I was in Rodrigues (December 9-15) was employed in packing up my specimens. These are very numerous, I hesitate at giving a guess at their number in figures, but they occupy, according to my calculation, close upon 100 cubic feet of packing case".

Another proof of the marine origin of the caves is found in the presence therein of several marine shells, as *Pleurotoma* sp.,[11] 150 yards above the sea, and 2,500 yards from the coast line; and *Terebellum* sp.[12] In places where the coral is at its minimum of alteration, perforations were seen in it, which from their slightly oval shape, and gradually increasing diameter, seemed identical with those of the *Lithodomi*, at present common on the reefs in Rodriguez [...].

There exists near my camp at the caves a sort of ravine, terminated at each end by a cavern, and having others opening into it. The terminal caves and precipitous sides at once determined me that this had once been a vast cavern, the roof of the greater part of which had fallen in; this fall has left a sort of ravine with a level bottom surrounded on all sides by precipices, nearly, if not quite, perpendicular, and having a height of from 30 to 90 feet; the bottom is now covered with earth and full of large trees, the tops of which rise to the level of the cliffs. Descent can only be effected with ease in two places, where heaps of limestone blocks rear themselves against the precipices. There is no reason to believe that water ever accumulates in the caverns opening into this "Gorge," and in these caves most of my specimens of any value were found, whilst the trees in the Gorge, being the abode of guinea-fowl, supplied my table. There were, judging from the hollow sound of the coral in various places under my boots, other caves with no mouths at all, but I did not judge it needful to open them. Capt. Wharton, of H.M.S. "Shearwater," opened one about a mile and a half W.S.W. of the Gorge, and descended by means of a rope, but nothing was to be seen but stalactites, nothing like earth on the floor.*

II. –Bone Earths and Stalgmites.

The cave-earth was always similar in colour to the reddish brown found on the basaltic parts of the island, but differed from it in being generally mixed with a greater or smaller per-centage of coralline sand, formed from the crumbling of the interior of the cave, or washed in. The earth itself was probably washed into such caves as were liable to influx of water; into the dry caves it seemed to have been blown in in the form of dust, which form it often kept.

Mixed with the cave-earth was a large admixture of land shells, including–

1. *Cyclostoma articulatum*,[13] now living in the island abundantly.
2. *Cyclostoma hœmastoma*,[14] much smaller than above, and also living in the island.
3. *Helix bewsheriana*, 1 ¾ inches in diameter across the whorls.
4. *Pupa* sp., 1 inch in length, and ⅓ inch in diameter.

The two latter are now extinct, and only found in the caves; there are also a small *Pupa*, and two small *Bulimi* now living in the island, and an *Achatina* (extinct), which occur in the cave-earth, with the remains of a huge *Julus*, much larger thanthose now in the island, equalling the species in the Seychelles.

I never met with any human remains, either bones or implements, in the cave-earth.

The depth of the bone-earth is very variable; in some caves we find it with a depth of from six inches to three feet; in others, however, it varies from four to nine feet in depth. Below about two feet I never found many bones, which makes me believe that the agency which deposited the bones in the caverns, never operated until the later days of the existence of the Solitaire. The bones might certainly have decayed, but yet I usually found that the bones which were well covered with earth were in much better preservation than those near or upon the surface, which were usually much decayed. This makes me think that the Solitaire resorted to the caverns in case of fire in the island, which has been known to have denuded it several times of its trees; more so, as in several cases I found nearly perfect skeletons, which lay evidently as they died; this precludes the idea that they were carried there by wild cats. Again, in the bottom of a cleft near the mouth of a cave, I found the greater part of the skeletons of a male and female[15] Solitaire; they had clearly fallen in and were unable to extricate themselves, but the bones being but imperfectly covered, many bones were so much decayed as to prevent their removal. But I could not doubt that they arrived there alive, and if not driven into the neighbouring hole as a shelter under some alarm, what could have allured them there? Nor were any bones found in the caves at any distance from the mouths, at least, if there were, they were single, and looked as if they had been washed there. Land crabs inhabit some of the caves,[16] and may have conveyed the dead Solitaires into the innermost recesses, when decay enabled them to remove portions of the carcasses at a time.[17]

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[11] Slater (1875) has the additional text: "(Sept 21/74)".

[12] Slater (1875) has the additional text: "Sept 23. and".

[13] Given by Slater (1875) as "Cyclostoma Rodericana".

[14] Given by Slater (1875) as "Cyclostoma sp:".

Stalagmite of any thickness is uncommon in the caves; in three caves only did it occur in anything like extensive sheets, but it often occurred in small patches of a yard or so in diameter under some long stalactite. But in one long cavern, near a fishing station called Patates, there was evidence of there having been rather an extensive system of stalagmite layers. This cave was nearly a mile in length, and ran downhill, having an elevation of about 200 feet above the sea level at one mouth, and not more than 25 at the other; moreover, it was clearly occasionally the bed of a stream. In one place in this cave there was an interesting relic in the shape of a sort of column composed of alternate floors of stalagmite and cave-earth. It occurred in an angle of the cave where the force of a stream coming down from the higher mouth would just have missed it. It was about 8 feet in height, and there were three or four layers of stalagmite in it. At one period, before the streams began to flow through the cave, this system of alternate layers had existed all over the cavern, but had been broken up by the stream, which would wash out the earth, when the stalagmite would fall in. Evidences of the stream were to be found in the trunks of trees and beds of leaves, with smooth ripple-marked sand in the floor of the caves.[18]

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[15] Slater (1875): "♂ and ♀".

[16] Slater (1875) includes the text: "(one gave me a fright one day by causing clattering down the rocks, which startled me not a little), and as I believe they would eat most things".

[17] Slater (1875) adds: "When near Zanzibar, a land-crab was running away one day with a sextant in its heavy mahogany case: the owner (Capt Wharton of H.M.S Shearwater) had only time to stop him before he got into the thick woods, and the mahogany was clawed and dented by the inquisitive crustacean: with such strength might not the Tourlurous [= land-crab] have hastened the death of such animals as had taken what was intended to be only momentary shelter in the Caves? and, again, might not the solitaires have slept occasionally in Cave-mouths?"

[18] Slater (1875) adds the following section to the end of the text: "Section III
Description of the bones, &c.

The most common bones in the caves of Rodrigues are of extinct land-tortoises: as these have already been reported upon by Dr Günther, it is hardly worth while noticing them, tho' I may observe that that eminent authority believes that three species existed in the Island.

As far as I could make out, none of the proverbial "oldest inhabitants" had ever seen any of the tortoises alive, but from the way in which the bones lie exposed to the air, I could hardly fancy that a long period has elapsed since their final extinction: in some cases the so-called "tortoise-shell" lay close to the skeleton.

I hardly know to what agency to assign their extinction: they might have been exterminated by man, for many tortoises are now imported into Réunion (and I believe, also Mauritius) to serve as food; another cause might be that their food ran short after the various fires (that are known to have laid waste the Island) and they might have been decimated by the fires themselves.

It is clearly evident that the Solitaire had vanished from the island many years before the tortoises: none of their bones were seen by me "Sup Iore"[?], as was several times the case with those of the tortoise; and these even in the caves were never in a good state of preservation unless well covered with earth.

We know from an extract from the "Correspondence generale de l'île de France" lately forwarded to Prof. Newton from Paris and published by him in the P.Z.S (Jan 9 1875) that the Pezophaps was in existence as late as 1760, and we have the testimony of d'Heguerty in 1754, but I fancy they must have survived the former by many years.

As to the cause of their disappearance, I am inclined to agree with the theory propounded by the Messrs Newton giving wild cats and pigs as the destructive agents; wild cats are very numerous in the island and are of large size; when returning home at night after dark from the "Chasse aux Pintades" I have occasionally heard four

> * I was surprised when I made my preliminary survey of the cave tract in Rodriguez to discover the amount of work already done. Out of the first 13 caves, I found 12 to bear unmistakeable signs of previous research. Nevertheless, I deemed it best to dig them over again, a proceeding which elicited a certain number of bones, though it gave no information whatever as to their deposition.[19]

Balfour 1879

91: Balfour, I. B. 1879 The Physical Features of Rodriguez, *Philosophical Transactions of the Royal Society of London*, vol.168, p.290.

> The caves from which the bones of the Solitaire and other extinct birds have been obtained occur in this limestone plain. Some of them extend for a great distance through the rock, and are rich in stalactites and stalagmites; others again are mere small holes. The whole plain is riddled with these caves, and on walking over it one constantly passes small apertures and fissures, evidently "blow-holes" of some subterranean cavern. Wide and deep hollows are also met with, on the floor of which large fragments of limestone lie in confused heaps. These are apparently old caves of which the roofs have fallen in, and the continuation of the cavern may be found at either extremity. The floor of these hollows is composed of volcanic soil, often with large masses of volcanic rock on the surface, and commonly clothed richly with vegetation.

Newton 1883

92: Newton, E. 1883 Discours de l'Hon. E. Newton, *Transactions of the Royal Society of Arts and Sciences of Mauritius*, new series, vol.xi. Pages 138-139:

> The Secretary has alluded to the project of further investigating the contents of the "Mare aux Songes" of Dodo celebrity. I think it would be most desirable to do in order to recover more remains of those species now extinct, the traces, of which have already been found there, I believe the investigation is merely a matter of money, and Mr Stanley, the resident engineer in charge of the construction of the railway line, made, at my request, an estimate of the cost of draining the marsh in order that the peat at its bottom might be more easily removed; and if my memory serves me, I think he put the total cost at about £100. I therefore most strongly recommend the undertaking to the serious consideration of the Society. The place is so easy of access by a railway that as said before, the question is merely one of money.

Daruty 1884

93: Daruty, A. 1884 Annexe D. Rapport Annuel du Secrétaire, *Transactions de la Société Royale des Arts et des Sciences de Maurice*, nouvelle série, vol.xiv. Pages 105-106:

> Solitaire. A ce propos vous avez plusieurs fois exprimé le désir de voir entreprendre de nouvelles recherches à Rodrigues au sujet des ossements du Solitaire, de

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or five at once in the woods: wild pigs (feral) have been very plentiful also: it may be easily imagined what havoc could be caused by these two introduced pests, actively aided by man & the fires in the island, to a harmless and unwieldy pigeon, unable to fly, and all the more, if, as to believed, the Solitaires only produced one egg at a time, and only had one brood per annum. The following bones [...]".

[19] Slater (1875): "Out of the first thirteen caves I found, I believe I am correct in stating that twelve bore unmistakable signs of previous research.

But when I considered that the work had been accomplished there, tho' at the insistence of a naturalist of great authority, by a police magistrate, who, tho' a man of observation, could hardly be called scientific, as his efforts were directed solely to collecting bones and not towards investigating the cause of them being there. I deemed it best to dig them over again; and this proceeding, tho' it elicited a certain number of bones, gave no information whatever as to their deposition.

This naturally limited my sphere of action to a very great extent, because I think it probable that in a field where history of the past is so very difficult to glean, some valuable sheaves may have been trodden underfoot of the reapers; for the Hon Edward Newton was not able to superintend his work at all."

> cet oiseau dont l'infortuné Leguat nous a laissé une si complète description dans son ouvrage publié en 1721. Il faut espérer que grâce à l'intervention du Patron de notre Société Sir G. F. Bowen et de celui qui le remplace actuellement, S. E. le Lieutenant-Gouverneur, vous ne tarderez pas à voir le Museum Desjardins en possession de ces restes précieux.
>
> [Solitaire. On this subject you have expressed several times the desire to see undertaking of new research at Rodrigues concerning the bones of the Solitaire, of this bird of which the unfortunate Leguat left us such a complete description in his work published in 1721. It should be hoped that thanks to the intervention of the Patron of our Society Sir G. F. Bowen and of him who currently replaces him, H. E. the Lieutenant-Governor, you will not be long in seeing the Desjardins Museum in possession of these precious remains.]

This was proposed at the Meeting of 28th July 1880. G. F. Bowen is George Ferguson Bowen, Governor of Mauritius 1879-1880.

Anon. 1884

94: Anon. 1884 Séance du Mercredi, 28 Juillet 1880, *Transactions de la Société Royale des Arts et des Sciences de Maurice*, nouvelle série, vol.xiv. Page 21:

> Sur une observation présentée par le docteur Edwards, il est décidé que la Société demandera au gouvernement d'écrire au magistrat de Rodrigues pour que des mesures soient prises, lors des travaux de drainage qui seront faits à Rodrigues, pour que les os qu'on pourrait retirer des mares soient conservés parce qu'il se pent qu'on y rencontre ceux du *Solitaire* et de divers autres animaux qui ont entièrement disparu.
>
> LE PRÉSIDENT promet d'écrire à ce sujet au magistrat de Rodrigues et d'en entretenir le docteur Villemont qui part bientôt pour cette île
>
> [On an observation presented by Doctor Edwards, it is decided that the Society will ask the government to write to the magistrate of Rodrigues so that measures are taken, during work of drainage which will be made in Rodrigues, so that the bones which one could extract from the ponds [*mares*] are preserved because it is possible that one meets there those of the *Solitaire* and various other animals which have entirely disappeared.
>
> The PRESIDENT [Virgile Naz] promises to write on this subject to the magistrate of Rodrigues and to maintain it Doctor Villemont who leaves soon for this island]

Page 22:

> Diverses observations ont lieu entre les membres au sujet des fouilles à faire en Octobre prochain à la Mare aux Songes, au Grand Port, où l'on pense rencontrer des squelettes complets du *Dodo*, de la tortue de terre, et d'animaux dont l'espèce a entièrement disparu.
>
> [Various observations take place between the members about the excavations to be made next October at the Mare aux Songes, by Grand Port, where one thinks of finding complete skeletons of the *Dodo*, land tortoise, and animals of which the species have entirely disappeared.]

Anon. 1885

95: *The Sydney Morning Herald*, 9th October 1885, p.4 ("Mauritius. (From Our Correspondent.) Port Louis, Sept. 18.") (National Library of Australia http://nla.gov.au/nla.news-page1405658):

> Another discovery of Dodo bones has been made, this time in a cave in the Black River district. This will gladden the hearts of many scientific gentlemen, as it is

well known that there are not more than three complete skeletons of this extinct bird existing.

"C. M." 1891

96: Letter from Richard Owen to John Mitford, 30th December 1865 (quoted in C. M. 1891, pp.267-268):

> I am busy, as you may suppose, with my *Dodo*, and hope to have my account of the extinct bird ready for the meeting of the Zoological Society on January 9, 1866. They have come at my busiest time, and I often feel the longing to be at the repose of 'a retiring allowance,' for this is a rough world to battle with. I will not fail to send you the earliest copy of my *Dodo* paper. I intend to arrange the figures of the bones in an outline of Edward's painting of the bird in our gallery, which is quite correct. With my best wishes,
> I remain, yours ever truly,
> RICHARD OWEN.

97: Letter from Richard Owen to John Mitford, 12th February 1867 (quoted in C. M. 1891, p.276):

> BRITISH MUSEUM, *February* 12, 1867.
> MY VERY DEAR FRIEND,–I am glad you have received any pleasure from my dry account of the Dodo's bones, but they are all that be left now of that species of bird!

Revue Historique & Littéraire de l'Ile Maurice 1893

98: Letter from Jean René-Constant Quoy to Julien Desjardins, dated Paris 15th June 1830 (quoted in Anon. 1893):

> Je suis impatient de connaître le jugement du célèbre professeur sur les os de Rodrigue et s'ils ressemblent au peu qu'on possède à Londres de ceux qu'on croit avoir appartenu au Dronte.
>
> [I am impatient to know the judgement of the famous professor [Cuvier] on the bones of Rodrigues and if they resemble a little those one has in London which one believes to have belonged to the Dodo.]

Clark 1902

99: Clark, E. E. 1902 The Dodo [Letter from Edith E. Clark to the editor of the *Westminster Gazette*], *Westminster Gazette* 16th January 1902. [Handwritten quotation in the copy of Strickland & Melville (1848) in the Rare Books Collection, Alexander Library, Edward Grey Institute, Department of Zoology, University of Oxford]

> The Dodo
> To the Editor of the Westminster Gazette:–
> Sir,–In an extract from your paper sent to me by a friend, I read the statement: 'There are heaps [?] of skeletons of the dodo about, discovered in the bogs and alluvial mud of Mauritius during the latter half of last century.'
>
> I can only say that I am ready to challenge any one to come forward and state that they have dug up such remains in any other place than at Mare aux Songes, on the Plaisance estate, Grand Port, Mauritius.
>
> After many years residence, during which he explored every part of the island in the cause of science, my father had come to the conclusion, long before his discovery, that the marsh in question was the only spot where remains of animals would likely to be found, as it lies in a deep hollow surrounded by high ground sloping down from the hills, and it has no outlet, coves or river which is not the case in other marshes in the island.

> That many skeletons of the dodo exist much surprises me. Perhaps your informant would be kind enough to state whether they were found whole in the bogs and alluvial mud or whether they set up after discovery.
>
> All the bones dug up in 1865 were loose, and no bones was [*sic*] attached to another, as not a trace of muscle or tendon remained. Most of the skulls had been destroyed by the rootlets of aquatic plants. Indeed the head of the skeleton at the Natural History Museum was the only one found in a sufficiently good state of preservation to allow of its being mounted. As for the horny part of the mandibles, they had quite dispeared. The search for these remains was conducted with some difficulty owing to the depth of the water and the soft mud, which prevented the men from having any foothold, some rough rafts or 'catamarans', made of the trunks of banana trees, were floated. On these the natives stood and supported others with ropes passed und[er] their armpits, while they felt for the bones and picked them up with their toes.
>
> I hope, Sir, that you will be kind enough to publish my letter, as it would be interesting to have more light thrown on the subject.
>
> Yours faithfully. [signed]
> Edith E. Clark
> London January [?] 13.

The Illustrated London News, 1937

100: The Illustrated London News, 1937, vol.190, issue 1, p.178:

> A NEW NATIONAL POSSESSION: ONE OF THE EARLIEST KNOWN PICTURES OF THE EXTINCT WHITE DODO OF RÉUNION, ACQUIRED BY THE NATURAL HISTORY MUSEUM.
> The British Museum of Natural History at South Kensington has just purchased this small watercolour by Pieter Holtsteijn (1580-1662), one of the earliest known pictures of the extinct White Dodo (Didus solitarius), which once inhabited the island of Réunion. Holtsteijn was the first artist to paint this species. Pictures of the White Dodo are much rarer that those of the dark grey Dodo of Mauritius, on which Tenniel based his famous bird in "Alice in Wonderland."

Hume *et al.* 2009

See above (Letters regarding the discovery of dodo bones at Mare aux Songes).

Rupke 2009

101: Richard Owen to Charles Ottley Groom-Napier, 19th March 1878. Royal College of Surgeons, London, Misc. MSS/Q(xxii); also in the Owen Correspondence at the Wellcome Institute Library (quoted in Rupke 2009, p.177):

> So with nomogeny [origin by natural law]. The accumulation of facts in embryology and palaeontology is such as to make their conception or rational exposition impossible on the miraculous "creation-of-species-hypothesis" (thaumatogeny). Consequently, every young cultivator of biology, as a rule, is a nomogenist.
>
> But, "How do you get one species out of another; say, a dodo out of a dove, a Bushman out of an ape?"
>
> Lamarck has suggested one way of operation of the secondary law; Darwin has eloquently advocated another way. In the case of the dodo I find the theory of Lamarck applicable.

Synopsis of Dodo-Related Communications from the Thirioux – Newton Correspondence, UMZC

A series of unpublished letters, held at Cambridge, from Etienne Thirioux, living in Mauritius, to Alfred Newton, at Cambridge, provide information about Thirioux's finds. They date from 1899-1908 and document Thirioux's excavations on Mauritius, including his finds of dodo bones and remains of other extinct species.

Although Thirioux never stated the exact location of the sites he investigated, the general areas where he collected are known: the Vallée des Pailles (Thirioux-Newton Correspondence; Germain 1921), a "partly collapsed cave, about 800 feet [244m] above the sea, and about two miles and a half from Port Louis" (Newton 1904, p.626; Thirioux-Newton Correspondence), the base of Le Pouce mountain (Pitot 1905, Germain 1921, Arnold 1980, Cowles 1987, Janoo 1996, Mourer-Chauviré *et al*. 1994, Mourer-Chauviré *et al*. 2004), Le Pouce valley (Hume 2005), Anse Courtois (Pitot 1905, Janoo 1996), Vallée des Prêtres (Pitot 1905, Germain 1921, Janoo 1996), the foot of Montagne du Corps du Garde (Pitot 1905, Janoo 1996), Roches Noires (Hume 2013) and generally in the Pouce area (Vinson 1968) and mountain ranges close to Port Louis (Cowles 1987). The valleys where Thirioux searched are now much overgrown with exotic species (Hume 2005). At these sites he explored several caves, scree slopes (*éboulis*), cliff undercuts, depressions (*enfoncement*) and river alluvium (Halais 1942). In the environs of Port Louis he excavated in the scree (*éboulis*) and the caves (*grottes*) (MS. note by Paul Carié accompanying dodo bones, Lausanne Geological Museum).

The upland area around Le Pouce consists of steep "escarpments often incised by steep v-shaped valleys. Situated along the contact zone between escarpment and valley are a number of small undercuts, and vast boulder fields/scree cover the base of the escarpment and the valley sides. Some of the larger material within the scree also forms small caves or fissures" (Hume 2005, p.131). A survey conducted by Julian Hume, Greg Middleton and Owen Griffiths in 2007 found a previously excavated large overhang in boulder scree in the Le Pouce Valley (350m above seal level), under Snail Rock (see Parish 2013, fig.6.37). As Thirioux is the only researcher known to have excavated on Le Pouce this could be one of his localities (Hume 2011, 2013).

From 1910 to 1913 Paul Carié excavated in some of Thirioux's localities. The areas he explored were the chain of mountains surrounding Port Louis, the Montagne du Corps du Garde, the Rivière Noire, and Mare aux Songes (Carié 1930).[20] Carié sent Thirioux material to Paris in 1911-1912 (data from MNHN specimen labels) (Hume 2005, 2011). Part of Thirioux's collection was acquired by the Paris Museum in 1910 (Mourer-Chauviré *et al*. 2004).

During 30 years of research Thirioux discovered remains of the dodo and *Aphanapteryx*, *in situ*, in addition to the bones of parrots and other birds, tortoises, snakes and lizards (Carié 1930, Vinson 1968). He was able to construct two complete skeletons of the dodo from the bones he found (Pitot 1905, Halais 1942). The age of the remains is probably Quaternary, probably Holocene (Mourer-Chauviré *et al*. 2004). Arnold (1980) remarked: "Thirioux's material appears to be of recent origin, being completely unmineralized and usually without a very heavy patina. In fact it includes remains of two forms introduced since Mauritius was discovered by Europeans, [*Asterochelys radiata* and an anuran] However, as Thirioux appears to have collected at a number of sites, it cannot be assumed that all the material is as young as this" (p.36).

Newton (1905) stated that amongst Thirioux's finds "Some of the smaller Dodo-bones are of great rarity, and at least one of them (the pygostyle) had not been found before. M. Thirioux has disposed of his considerable series of these bones to the Museum of Mauritius. Prof. Newton expresses a hope that some competent person may be found to publish a scientific description of this important collection" (p.142). The dodo material collected by Thirioux included hyoid elements and caudal vertebrae (D'Emmerez de Charmoy 1903).

Other remains collected by Thirioux can be found in museums in Port Louis (Mauritius Institute), London (NHMUK), Cambridge (UMZC), Lausanne, Lyon, Paris and Durban (Holyoak 1973; Arnold 1980; Cowles 1987; Mourer-Chauviré *et al*. 1994; Mourer-Chauviré *et al*. 2004).

Initially he gave specimens to the Mauritius Institute (Museum Desjardins). After selling much of his material to the Mauritius Institute for £80 in 1903 he bought back many specimens as he became dismayed at the lack of professional curation and sent the most important specimens to Alfred Newton free of charge (Vinson 1968, Grihault 2005). Emmerez de Charmoy (1903) remarked: "Les conditions auxquelles Mr. Thirioux serait disposé á céder au Museum ses collections vous ont été proposées personnellement et je ne crois nécessaire de les stipuler ici" (p.2) ["The conditions to which Mr. Thirioux would have been willing to yield his collections to the Museum were proposed to you personally and I do not believe it necessary to stipulate them here"].

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[20] Germain (1921), however, stated that Carié's researches lasted from December 1911 to March 1913 and extended from the centre to the south of Mauritius.

Thirioux collected numerous dodo bones, and there were sufficient for him to construct a few skeletons. The first was mentioned in correspondence with Newton (26th December 1901), and was photographed (figure 11). Comparing the photograph with other skeletons suggests that casts were made at some point and used in the construction of various skeletons, including those at Cardiff, Delft, La Rochelle, Brussels, Harvard and the Darwin Museum, Moscow (see Catalogue of Specimens). Indeed, according to Deyrolle, the Delft skeleton was composed of bones excavated by an unknown Frenchman around 1900 (De Wit 1940). A very nearly complete skeleton, apparently composed of the bones from a single individual was assembled and subsequently sold to the Mauritius Institute by Thirioux (see Catalogue of Specimens). A third skeleton was constructed and later became the property of the Durban Museum (see Catalogue of Specimens). Thirioux also constructed near-complete skeletons of *Aphanapteryx bonasia* and of *Leiolopisma mauritiana* (Cheke 2003). Dodo material collected by Thirioux was also used in the skeletons at the UMZC and Sauzier's dodo skeleton at Port Louis (see Catalogue of Specimens).

The following is a synopsis of the correspondence providing information on Thirioux's finds of dodo bones.[21]

27th September 1899:
Mentions that the Museum of Mauritius possesses a skeleton of the dodo, a gift of Théodore Sauzier, but that this lacks the anterior part of the beak. Sends sketch of beak of the dodo (figure 1). States that he found the remains last month in "un eboulis de montagne" close to Port Louis, approx. 800 feet (244m) above sea-level and 2½ miles (4.0km) into the Vallée de Pailles, which opens to the west. The bones were found almost at the base of the soil in a small open cave. The remains of two individuals were discovered: undoubtedly a male and female ("2 individus mal et femelle sans doute"); the bones were spongy and strongly deteriorated due to rock falls. They consisted of 3 'tarses,' 1 'metatarse,' 2 phalanges & femur, 1 tibiotarsus broken in two, 2 left clavicles, 1 fragment of sternum, 2 bones from the same side in the form of a 'clavette' (key/peg/collar) supporting the tibiotarsus, and many fragments of bones from the wing, ribs, *etc*.

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[21] Measurement conversions are based on the nineteenth-century Paris foot = 32.48cm, giving 1 Paris inch = 27.07mm, unless otherwise stated. Scales for illustrations are taken from Thirioux's notes accompanying his photographs.

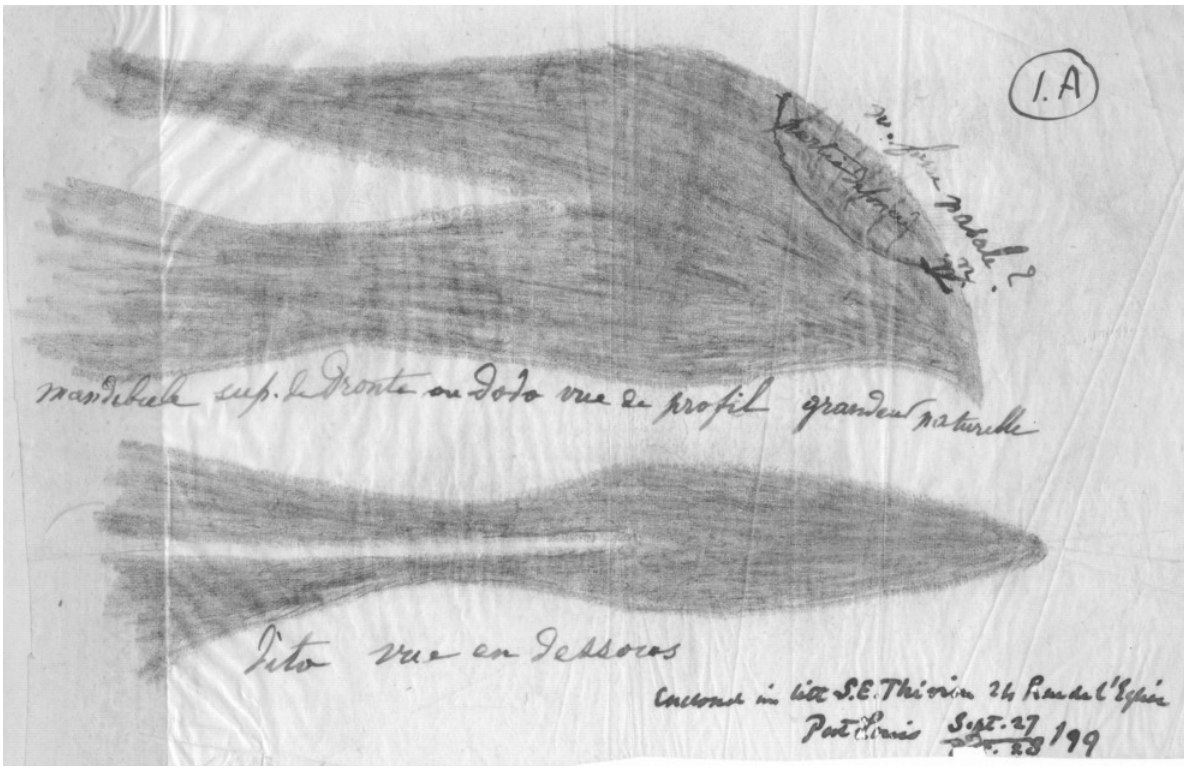

1.A
du fosse nasale?
partie defoncée
n
mandibule sup. du Dronte ou Dodo vue de profil grandeur naturelle
Dito vue en dessous
Enclosed in litt. S.E. Thirioux 24 Rue de l'Eglise
Port Louis Sept. 27 /99

Figure 1: sketch of dodo beak found by Thirioux, lateral and ventral views (letter: 27th September 1899). Labels read: “du fosse nasale? [nasal fossae?]”, “partie defoncée [broken part]”, “n”, “mandibule sup. Du Dronte au Dodo vue de profil grandeur naturelle [upper mandible of Dronte or Dodo seen in profile natural size]”, “dito en dessous [ditto from below].”

Newton (6th November 1899) offered to purchase the bones, but no sum was given.

10th October 1899:
Sends a photograph of the beak (figure 2) of the dodo as well as the sketch of the same in ventral view.

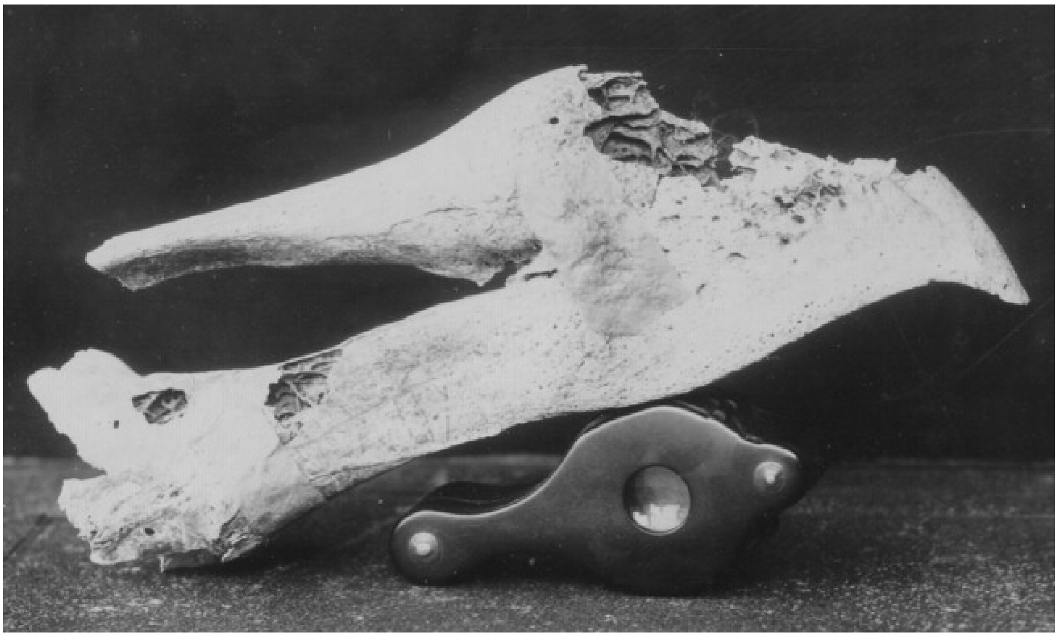


Figure 2: dodo beak (length of specimen 5½ English inches (139.7mm); letter: 10th October 1899).

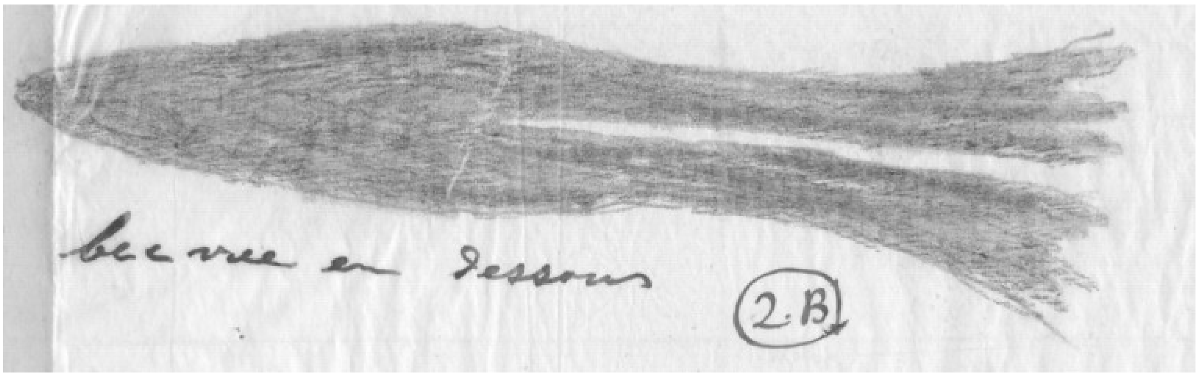


Figure 3: sketch of dodo beak in ventral view (letter: 10th October 1899).

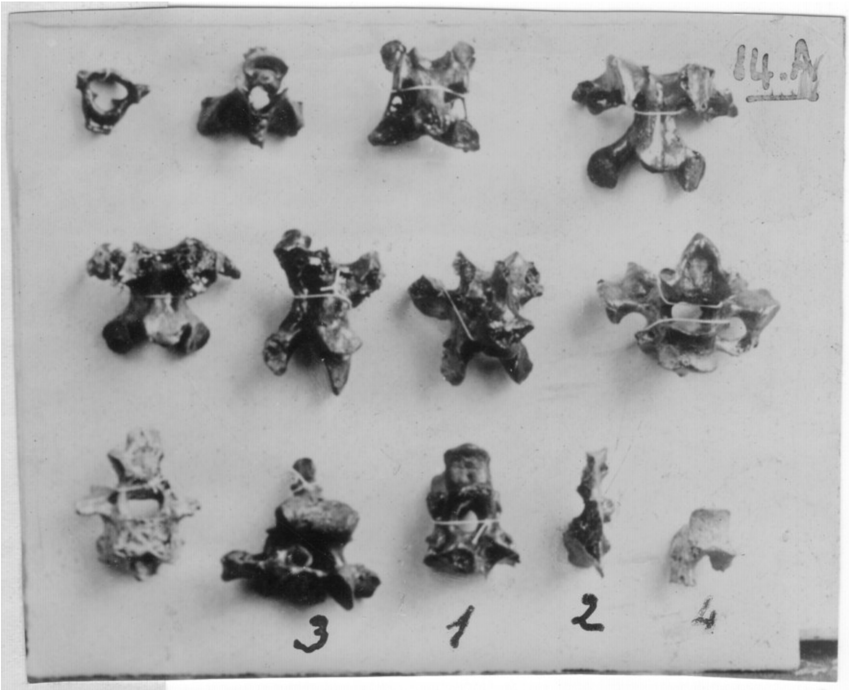
12th January 1900:
Remarks that up until the present it was impossible to continue his researches as the heat was too strong, the continuation of digging was difficult and dangerous with the result that all, or almost all, of the bones were fragmentary. States that he intends some day to dispatch the remains to Newton. Sends a sketch of a greenish transparent horn spur found at the same place. Suggests that it might belong to a gallinaceous bird ("une gallinacé").

Newton (no date) asked for the bones to be sent.

20th April 1900:
States that the supposed spur ('l'ergot') of the dodo was in fact a spur ("un éperon") of a 'licorne' (*Naso* sp.). States that he has taken up his researches again in the same locality and in another place, less than 300 feet (97.4m) above sea-level. He has found further remains, probably belonging to the dodo: 1 femur, 1 tibiotarsus, 1 'tarse' and 'metatarse,' all fragmentary, in addition to a clavicle, a rib, and also one first and one second cervical vertebra and a 3rd. All these were found together in a fall of rocks, obviously an old cave, along with a great quantity of tortoise remains. He gives measurements (not exact) of the vertebrae:

1 cervical vertebra length 15 lines (33.8mm)
height 15 lines (33.8mm)
width 17 lines (38.3mm)
2 vertebra length 17 lines (38.3mm)
3 vertebra length 22½ lines (50.7mm)
width 19 lines (42.9mm)
all, or almost all, are badly damaged.

14th May 1900:
Sends a photograph of the vertebrae of the dodo (figure 4), including the atlas and 18th (prepelvic) vertebra. Notes that the neural canal in the latter is round as opposed to having a very elliptical outline as figured by Newton & Gadow (1893, pl.xxxvii, fig.2). The last vertebra of the photograph alone offers these conditions. Of the series of vertebrae in the photograph the 11th and 13th have the same external form and the 12th (which is unfortunately broken vertically) adapts itself perfectly to its neighbour, the 11th vertebral body; "it is on the contrary ended on the rear that is to say opposite to it and the insertion is a triangular pointed keel" (Newton's translation).



1	2	3	4	
5	6	7	8	
9	10	11	12	13

Figure 4: photograph of a series of 13 vertebrae of the dodo (letter: 14th May 1900). Key: 1) atlas, 2) axis, 3) 3rd cervical, 4-7) mid cervicals, 8) 13th cervical, 9) ?13th cervical, 10 and 12) ends of a notarium which has been broken, 11) 18th (prepelvic) vertebra, 13) fragment of 18th vertebra. The photograph shown here is actually that sent with letter of 15th March 1901, as this is the same photograph. Dimensions of the cardboard containing the vertebrae of the dodo ("mesure francaise"): 7 inches 3 lines (196.2mm) high by 9 inches (243.6mm) long.

Newton (19th June 1900) replied to this criticism.

13th June 1900:
Provides details of several new bones of the dodo he has found whilst continuing his excavations:

1. a complete beak of which the point is broken.
2. a femur in good condition (length 6 inches 3 lines (158.8mm), short diameter 10 lines (21.2mm)).
   1 tibiotarsus rather good length 8 inches 7½ lines (279.1mm) & short diameter 8 lines (16.9mm).
   English measurements.
3. a sternum of which ¾ of the keel has disappeared, but on the right side is mainly intact until the caudal part. There are impressions for only four ribs. States that he has one that is larger than the above, as well as many sternal fragments and vertebral rib fragments.
4. the notarium entire, but in an imperfect state, as well as the 18th vertebra in rather good condition. Part of the pelvis and the synsacrum, but in poor condition. States that he has one fragment of the pelvic extremity that shows no appearance of segments but with a branching, all which remove this bird entirely from the gallinaceous birds ("mais bien un tout rameaux qui éloignerait a toujours cette oiseaux des Gallinacées").
5. the complete bones of a wing including the carpometacarpus; also a clavicle and a coracoid.
6. all the pedal phalanges as well as the unguals, allowing the complete and authentic reconstruction of this part. Also two indeterminate bones which appear to belong to the dodo.
7. a cranium of which the caudal part is in good condition, although the ventral part is unfortunately truncated in front, and a rare discovery with the cranium – its atlas "as well as its 1st vertebra entire, in good condition".[22] Also the two bones in the shape of a 'lyre' which are found on the "roof of the palate, bones which occur in all birds but which do not have this form". A mandible in good condition, but of which one ramus is broken and coming from the same bird

---

[22] "son veritable atlas ainsi qui sa 1er. vert entier bon état". Here Thirioux appears to treat the atlas and the first vertebra as distinct. In modern anatomical nomenclature the atlas is classed as the first cervical vertebra.

as the largest specimen that he has yet. States that there is also an anomaly as both upper 'apophyses' of the beak are fused behind.

12th July 1900:
Sends a sketch of the skull of the dodo (figure 5) taken from the two partly complete beaks in his possession. It closely resembles the figure given by Strickland & Melville (1848, pls.viii, ix), although the beak is larger and the curve more accentuated. States that he has the "pharyngeal bones" ("os pharygiens") described by Melville (1848) in his possession, though they are slightly damaged; only the pterygoid does not compare well. States that he has found three similar bones of the wing, the 3rd phalanx. He mentions that he "might have found complimentary bones", but until now had no luck ("je trouverais également les os complimentaires mais jusqu'a présent j'ai été décu"). However, he is sure they exist since their place of insertion is visible on all the examples of the carpometacarpus as well as its last phalanx ("la dernière phalange que du métacarpien"); and that they have the greatest relationship with those of the gallinaceous birds ('gallinacées'). He believes that he is in possession of a fragment but cannot decide.

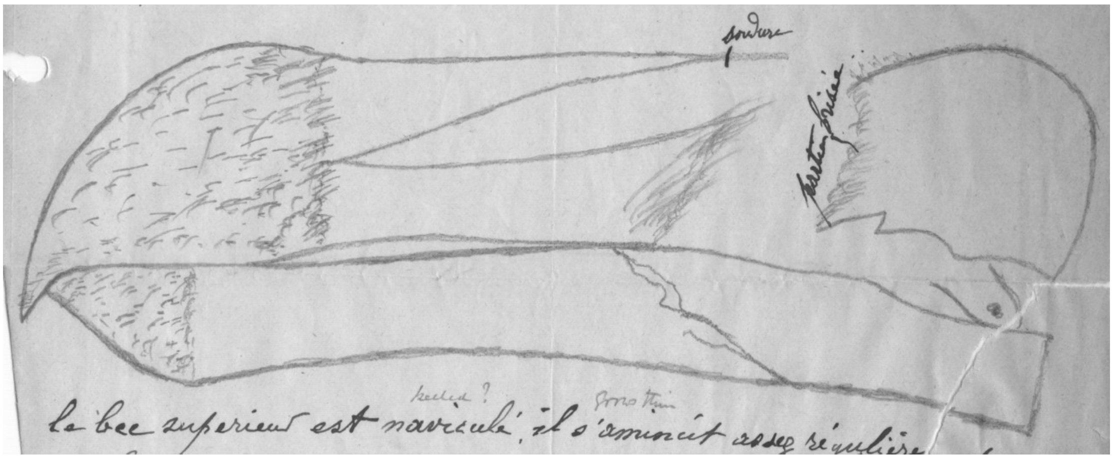

soudure
partie frisée
keeled?
grows thin
le bec superieur est naviculé, il s'amincit assez régulière

Figure 5: sketch of the skull of the dodo, natural size, taken from the two near-complete beaks in Thirioux's possession (letter: 12th July 1900). Labels read: "soudure [fused]", "partie frisée [broken part]".

25th July 1900:
States that the 11th vertebra of the photograph (figure 4) is certainly an 18th (prepelvic) vertebra and that the 10th and 12th are the two ends of the notarium. States that there is variation (sexual or varietal) in the cervical vertebrae. He has the atlas in duplicate, the fifteen cervical vertebrae and part of the synsacrum ("pelvis (colonne)"); the differences between these last are noticeable, the 'sculpture' is not the same although the vertebrae are of almost the same dimensions. Suggests that there are two forms of dodo present; in the first form the beak is narrower at its base and in the second it is broader but is of exactly the same length and shape. However, he concludes that attributing the variation to two species is going too far. He also has found the terminal bone of the wing ("l'onguicule le dernier os de l'aile").

Newton (1st September 1900) discredited the idea of two forms of the dodo & suggests that some of the other bones found may belong to *Anas theodori* and to tortoises and lizards.

5th September 1900:
Sends photographs of the sternum (figure 6) and near-complete skull ('tête'; figure 7) of the dodo, "the difference between this photogr. and the portraits is enough striking to do without commentaries." Has found the complete 'tongue' ('langue'; referring to the hyoid) in good condition, and will send it. "These bones, though very rare, are met with in many places as long as you know how to search in [stream] beds & exposed deposits. I have available at least 2 pairs for each [bone], which it is easy to confirm by the tarsal phalanges [*phalanges tarsiennes*] which are by far the most resistant bones, as for other bones they are very rare and always incomplete". He believes that the habits of the dodo approached those of the gallinaceous birds ('Gallinacées'), with which he considers it to have the greatest resemblance.

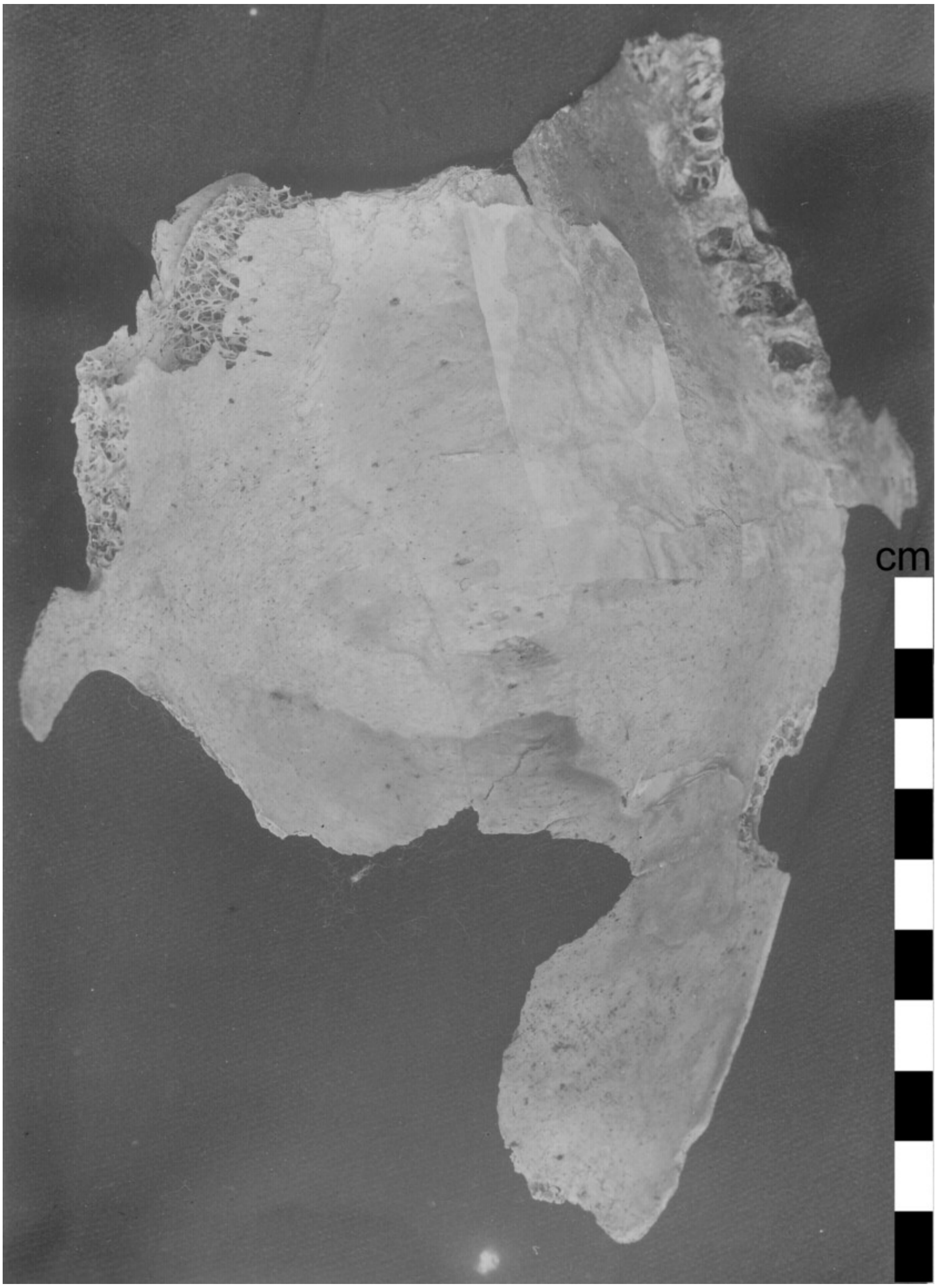
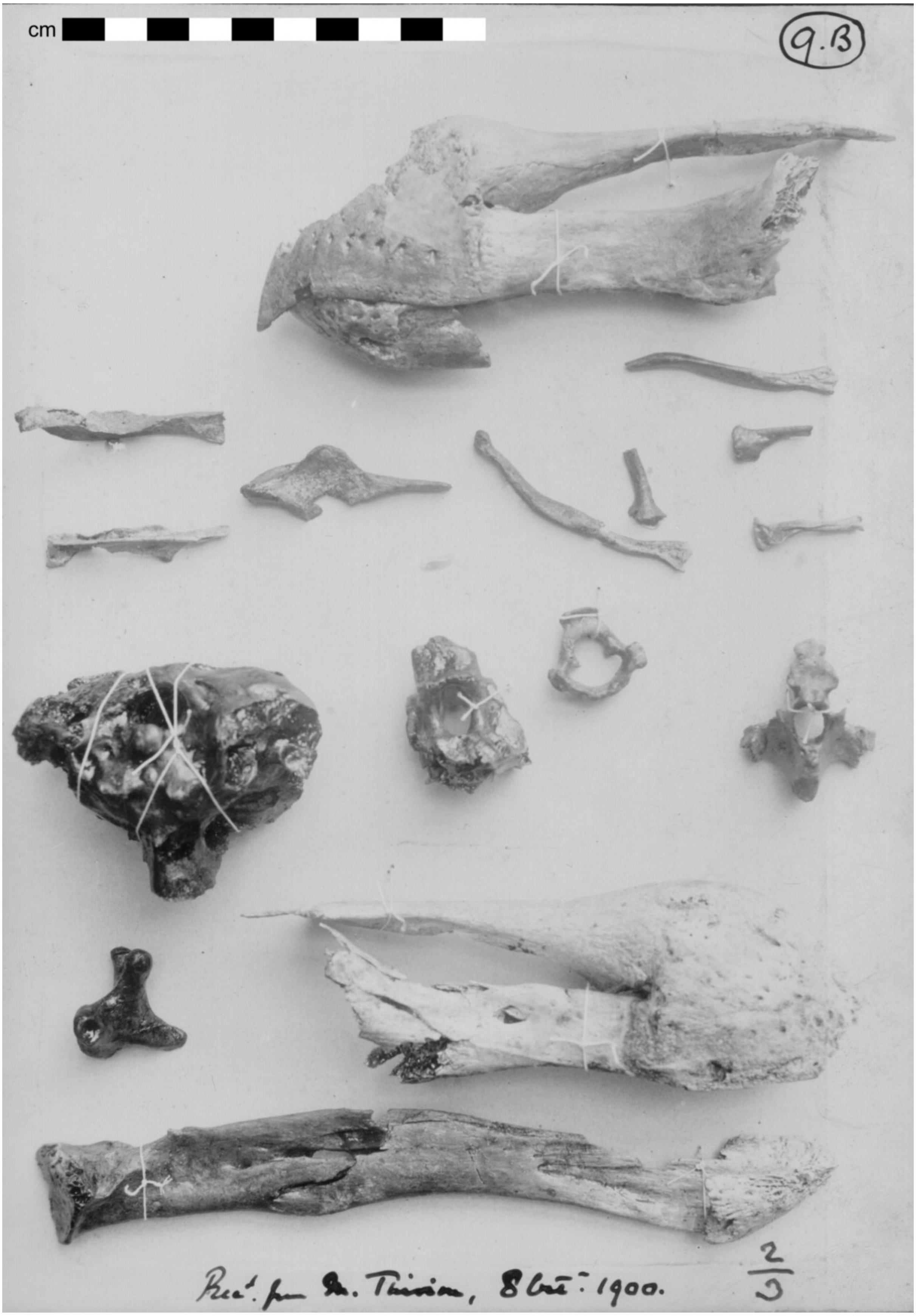


Figure 6: photograph of a fragmentary sternum of a dodo (letter: 5th September 1900). “Grandeur au 4/5 mesure en c/m Français [4/5 size measurement in cm French].”



Recd. from Mr. Thirion, 8bre. 1900.

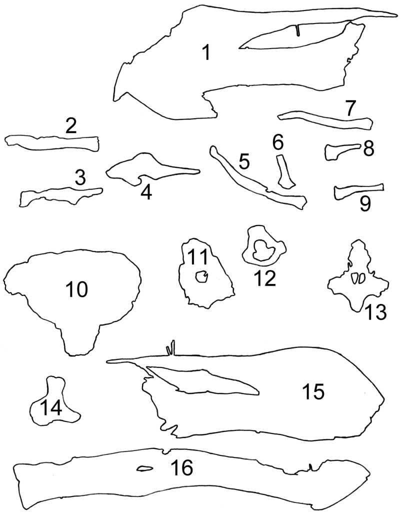
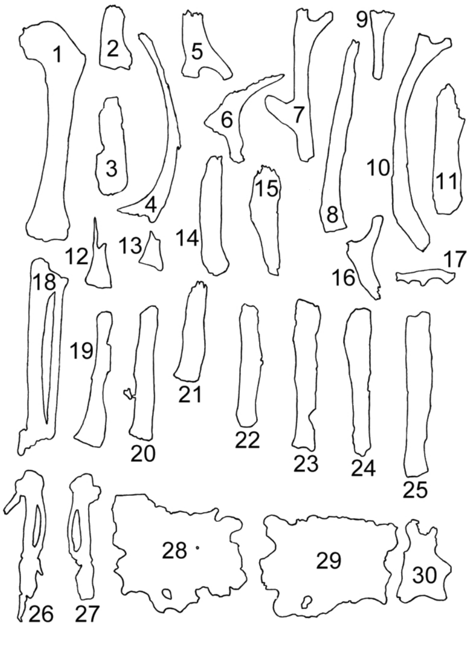


Figure 7: photograph of various bones of the dodo (letter: 5th September 1900). Key: 1) fragmentary beak and distal end of mandible; 2-4) ?palatine fragments; 5, 7) jugal arch fragments; 10) cranium; 11) 18th vertebra; 12) atlas; 13) axis; 14) right quadrate; 15) fragmentary beak; 16) mandibular symphysis and left ramus.

5th October 1900:
Sends a photograph of various bones of the dodo (figure 8), with an explanation on the reverse (translation by Newton added):

"Os du Dronte. Grandeur ⅔. [Bones of dodo. Size ⅔]
1 pterygoide (nouvelle forme?). [1 pterygoid (new form?)]
1 aile à peu près compléte. [1 wing almost complete]
2 vertebres soudées 15, 16 et 17 (2 formes l'une 3 trous l'autre 4). [2 fused vertebrae 15, 16 and 17 [*i.e.* the notarium] (2 forms: one 3 holes the other 4)]
Côtes sternales et fragments. [Sternal ribs and fragments]
Côtes dorsales et fragments. [Dorsal [Vertebral] ribs and fragments]"

Notes that the 1st phalanx of the wing is not similar to that figured (Newton & Gadow 1893, pl.xxxvi, fig.5). He has two examples that appear to be referable to this bone.



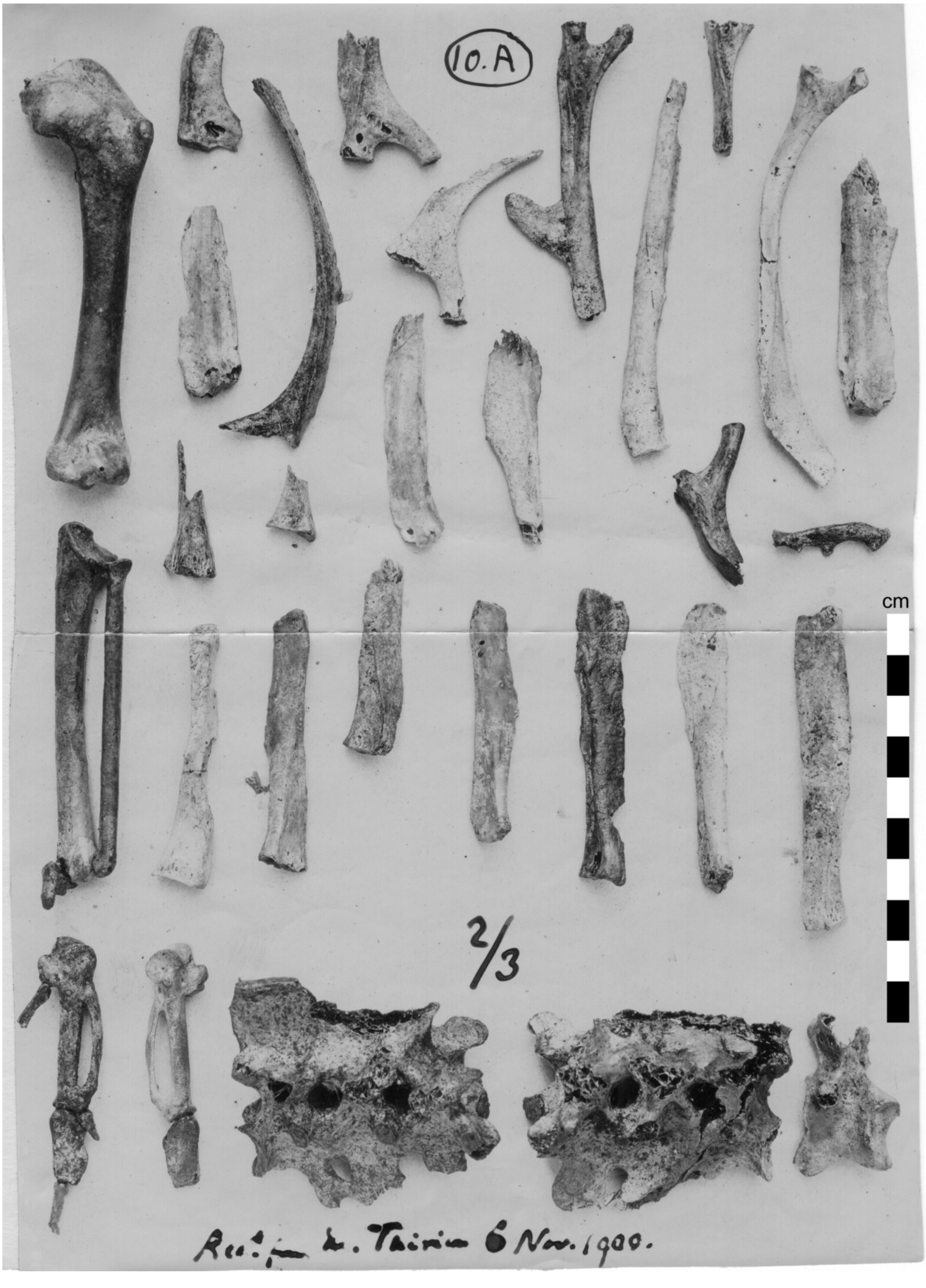


Figure 8: photograph of various bones of the dodo (letter: 5th October 1900). Key: 2-16) rib fragments; 17) pterygoid with basipterygoid process; 19-25) sternal rib fragments; left wing: 1) humerus, 18) radius with ulna and ulnare, 26) carpometacarpus with phalanges; 27) right carpometacarpus and phalanx 1 of digit II; 28-29) two notaria (no.29 is now in the Lausanne Geological Museum: MGL 20106, no.11); 30) 18th vertebra.

22nd November 1900:
States that there are two forms of the pterygoid, two forms of notarium [Owen figs.2 pl.v. fig.1-5 (added by Newton to his translation of the letter)] and two forms of 18th (prepelvic) vertebra, although these bones are damaged. Has since found a small bone, which appears to belong to the base of the carpometacarpus. He is certain of the terminal bone of the wing. Gives information on the localities of dodo finds: “the Vallée des Pailles is open only towards the west; the soil is very volcanic and considerable upheavals have taken place in a very recent epoch, otherwise it would be impossible to explain how bones which are now found about on the surface of the ground should have been able to resist the action of the weather”. States that he considers it an impossibility to attribute the remains to hunting by humans as there are no indications of human activity, such as by marrons, and tradition would have preserved the memory of a contemporary cataclysm, which is not the case. Suggests that the upheavals may have been due to a small earthquake in the last century. “The remains are found under the rocks forming part of collapsed ancient caves giving passage to subterranean rivers now destroyed and desiccated, and only having some infiltration in the heavy rains. The soil of these caves or rock shelters is generally higher than the surrounding soil and backing onto or very close to a rock wall from which it is separated by a depression. The plateau forms a hummocked enclosure of disturbed ground which apparently once constituted an immense marsh at an unknown time which has now completely dried up, probably due to subsidence of the subsoil”. Mentions that large quantities of terrestrial shells of extinct species (“Cyclostome tricarinatum” (*Trophidophora carinata*) and other smaller species of the same family, “Helix Dupontie” (*Plegma duponti*) as well as the remains of extinct tortoises and large lizards were found in the same localities as the dodo remains.

29th November 1900:
States that last Sunday he discovered bones of the dodo almost at ground level (*i.e.* near the surface) and in scree forming an escarpment ending at rocky plateau at the summit and is certain that man never ate at the sites.

Has found a very damaged cranium of which the right side is rather complete, having an almost intact orbital cavity as well as the cranial cavity, which he remarks is very small compared to its volume. Has also found the termination of the synsacrum. States that the synsacrum is slightly curved at its lower part and its extremity is round with a small round opening with the upper part imitating rather well the terminal portion of a large beetle (“gros scarabée”). Remarks that the question of the complete absence of the caudal vertebrae (“vertèbres mobiles”), which are even found in the Rodrigues solitaire, is thus elucidated and that he will send a photograph. Has also found several notaria, all presenting differences in structure, but these differences are unimportant (“J’ai également trouvé plusieurs vertebra soudèes les 15, 16 et 17 toutes presentent du divergences de sculptures, mais comme ces diff: sont moyennes en passant”).

Sends a sketch (figure 9) of a small bone found with the carpometacarpus of the dodo, which he has had in his collection for several months: “nº.1 vue a plat avec 2 impression sup. en biseau du chaque côte en bas l’os est presque carré avec une seule impression 2. vue de dos grande long: 3. vue de face plus petite long. là se trouvent les impressions pour la cartilage.” [“no.1 view laid flat with 2 sup. chamfered impressions [grooves?] on each side; basally the bone is almost square with only one impression. 2. dorsal view of longer side: 3. view of shorter side. where are found impressions for the cartilage.”]

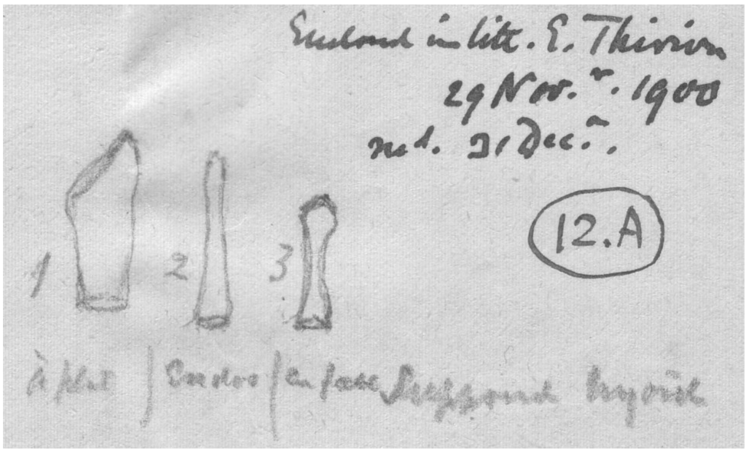


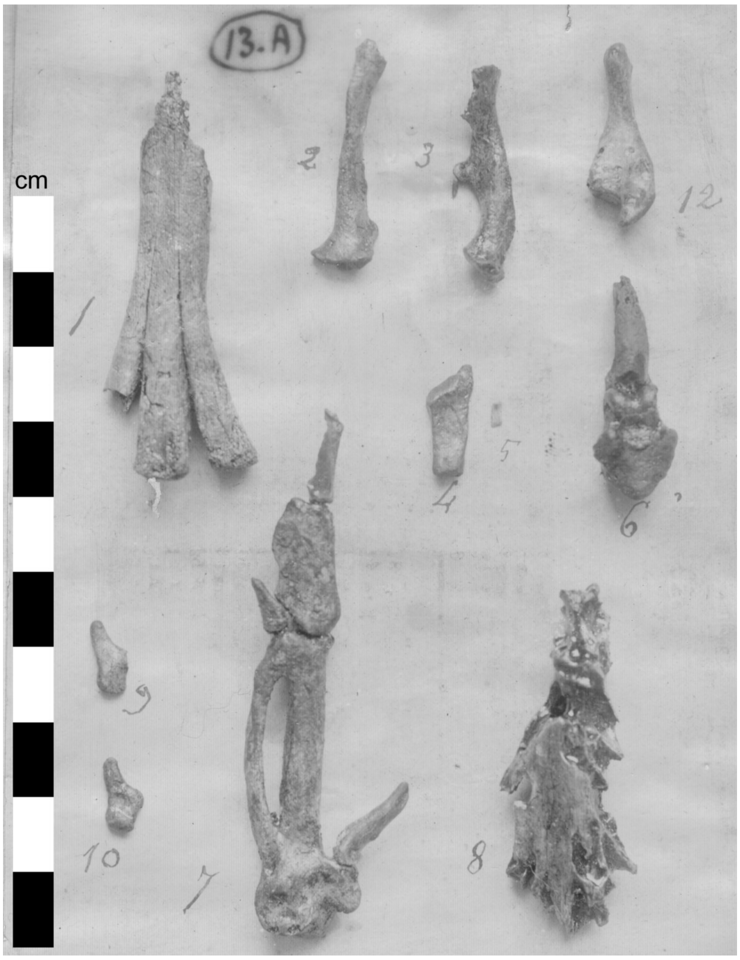
Figure 9: sketch of the hyoid bone (os basibranchiale rostrale) of the dodo (letter: 29th November 1900). Key: left: lateral view, middle: ventral view, right: anterior view with impression for cartilage.

Newton (31st January 1901) replied that the bone Thirioux considered to be a part of the hyoid apparatus may in fact be such.

31st January 1901:
Sends a photograph of more bones of the dodo (figure 10), with explanatory legend:

"Nº. 1 Metatarse inconnu [unknown tarsometatarsus]
2 et 3. Ptérygoïdes 2 var: Dronte [pterygoids of the dodo of two varieties]
4 Os hyoïde du Dronte [Os hyoid of the dodo]
5 Os hyoïde du pigeon domestique [?] [Os hyoid of the domestic pigeon]
6 phalange du métatarse (anormale) [hallux (abnormal)]
7 métacarpien complet du Dronte [complete metacarpus of the dodo]
8 Portion terminale du sacrum du Dronte (pas le vert. mobiles) J'ai un 2em spec moins developpé [terminal portion of the synsacrum of the dodo (no caudal vertebrae) I have a 2nd specimen less developed] [view from above: Thirioux: 15 March 1901]
9 et 10. Os double inconnu (trouvée avec l'os hyoide du Dronte) [unknown double bone (found with the hyoid bone of the dodo)]
12 Os inconnu (il porte des traces d'insertion dans l'angle du bas et parait avoir appartenu à us oiseau [unknown bone (it carries traces of insertion at the angle of the base and appears to have belonged to that bird]

Ces photogr: sont a très peu de chose près grandeur naturelle [these photographs are very close to natural size]".



> **Figure 10:** photograph of various dodo bones. 1) fragmentary tarsometatarsus of a juvenile dodo (reproduced in: Hume 2006, fig.21); 2) pterygoid; 3) pterygoid of ? juvenile dodo, with basipteryoid process; 4) os basibranchiale rostrale (with the same of a pigeon (5) to the right for comparison); 6) hallux with ?pathology; 7) complete left carpus; 8) distal end of synsacrum; 9) and 10) ossa paraglossi; 12) ?pygostyle.

Newton (28th February 1901) replied, adding comments on the photograph made by Hans Gadow, below:

"H. Gadow on photographs sent by Thirion 31 Jan^{y}. / 23 Feb^{y}. 1901
Rec^{d}. 27 Feb. 1901.
Most of these Dodo photos are dreadful and there is no indication of their relative sizes.
1 is of course metatarsal of a young „Dodo", not embryonic. Several months old would do very well.
2. 3 somebody's pterygoids.
4 Basilingual or corpus hyoideum.
6 looks like an end phalanx with some exostoses after injury. What does he mean by phalanges du métatarse? In opposition to the hallux-phalanx? The bone is rather large for a Dodo.
9 and 10.12 Inconnus. I cannot suggest anything for 12 and 9/10 cannot well belong to the hyoid apparatus if 4 is the corpus".

15th March 1901:
Sends a photograph of vertebrae of the dodo (the same as that sent on 14th May 1900; figure 4), with explanation: 1) 18th (prepelvic) vertebra, 2, 3) ends of a notarium which has been broken, 4) a fragment of the 18th vertebra.

25th May 1901:
Has found several patellae of the dodo, "they are stronger and diff[er] from those of the Solitaire".

27th August 1901:
Has constructed a skeleton of the dodo, although it is in bad condition, the sternum and pelvis especially. The pelvis has a 'passable' anterior part, the posterior part and the pubes are lacking (although he has several fragments of them). The synsacum ('colonne') is entire, although broken and the place of the caudal vertebrae is marked perfectly. However, the first synsacrum ("colonne pelvienne") he mentioned to Newton did not appear to bear any such. States that he has two specimens of caudal vertebrae of the dodo, resembling those of a turkey, although slightly more robust; the "apophyses laterals" are broken? Asks Newton to make an offer for the collection. Ends with the remarks: "I did this research initially as a hobby, [but] subsequently got somewhat engrossed which cost money and much exhaustion, but altogether it led to [many] pleasant moments, and if it pleases God I will not dwell there further" ("J'ai fait ces recherches d'abord par goût ensuite je ma suis un peu passioné et cela coûte de l'argent et beaucoup de fatigues, mais somme toute celà m'a fait passer d'agrèables moments, et s'il plait Dieu je ne m'en tiendrai plus là").

Newton (7th October 1901) subsequently asked Thirioux to make a list and valuation of his collection.

13th November 1901:
Provides a list of the bones of the dodo in his possession:
"2 becs superieurs (vous les connaissez par photogr. [2 upper beaks (known to you by photographs]
1 bec inferieur (complet) un peu fruste [1 mandible (complete) a little damaged]
1 crâne (cavité complet) partie posterieure en bon état) aussi plusieurs fragments [1 cranium (cavity complete) posterior part in good condition) also several fragments]
2 paires coracoïds en bon état [2 pairs of coracoids in good condition]
3 paires fibules [3 pairs of fibulae]

1 paire humérus l'un très bon l'autre en mauvais état pour tout le reste les ailes sont absolument completes l'une ayant toutes ses phalanges ainsi que le 2 os de posterieure du metacarpien [1 pair of humeri one very good the other in bad condition for all the remains of the wings are absolutely complete one having all its phalanges as well as the 2 bones of the posterior of the carpometacarpus [= the radiale and ulnare?]]
3 paires os carré [3 pairs of quadrates]
6 côtes sternales entières frustes plus des fragm. [6 whole sternal ribs, damaged, plus fragments]

1 côte pelvienne le sommet est cassé j'ai le sommet apparier [1 pelvic rib the top is broken, I have the top to match]
5 côtes dorsales incompletes ainsi que nombre des fragments [5 vertebral ribs, incomplete as well as numerous fragments]
3 paires scapula (omoplates) un peu frustes [3 pairs of scapulae ('omoplates') slightly damaged]
1 paire femurs (plus nombreux mutilés) [1 pair of femora (plus numerous mutilated)]
1 paire tibias fruste (plus nombreux mutilés) [1 pair of tibiotarsi, damaged (plus numerous mutilated)]
1 paire tarses métatarse dont l'un reccommadé mais en bon état (plus nombreux sp. mutilés plusieurs paires métatarses postérieurs en bon état plus toutes les phalanges les pieds avec leurs ongles aussi un grand nombre de phalanges de surplus ainsi que des ongules [1 pair of tarsometatarsi of which one is repaired but in good condition (plus numerous specimens mutilated, several pairs of posterior [= first] metatarsal in good condition, plus all pedal phalanges with their unguals, also a great number of surplus phalanges as well as unguals]
2 paires os pharyngien[s] [2 pairs of pharyngeal bones [= palatines?]]
1 paire Pterigoïdes 2 formes differente (plus fragments [1 pair of pterygoids 2 different forms (plus fragments]
1 os jugal et plusieurs fragments [1 jugal and several fragments]
1 os hyoïd [1 hyoid bone]
2 ou 3 paires rotules (supposé du Dronte) [2 or 3 pairs of patellae (supposed dodo)]
2 pairs os no déterm (supposé du Dronte) [2 pairs of bones, no determination (supposed dodo)]
5 atlas très bon specimens [5 atlases, very good specimens]
1 série complet des 14 vert. cervicales et dorsales mobiles (assez bonnes) avec plus de 60 vert: frustes ou brisées pour controler leur place respective qui est un peu différente du classement de celle que possède notre Museum car a partir de la 4em cervicale la différence est assez grande [1 complete series of the 14 cervical vertebrae and mobile dorsals ([in] good enough [condition]) with more than 60 vertebrae, [too] damaged or broken to determine their respective place, which is a little different from the arrangement which our Museum has, for from the 4th cervical the difference is rather large]
2 spécimens prestes mais presque entiers des vert: soudées 15em 16em et 17em [2 damaged but almost whole specimens of the notarium (fused vertebrae15th, 16th and 17th)]
2 vertebrès 18em ou prepelvienne en bon specimens [2 18th or (prepelvic) vertebrae of good specimens]
1 pelvis (fruste) mais le sacrum entier ayant très distinctement la marque de vert caudales les bords latéraux postérieurs marquent ainsi que les os pubis (J'ai aussi des portion du ces os) néanmoins a peut le monter [1 pelvis (damaged) but the synsacrum whole, having the mark of the caudal vertebrae very distinctly marked on the posterior lateral edges as well as the pubis (I also have the portion of the these bones) nevertheless I can assemble it]
4 clavicles incompletes (supposé du Dronte [4 incomplete clavicles (supposed dodo]
4 vert caudales (frustes) supposé du Dronte [4 caudal vertebrae (damaged) supposed dodo]
1 sternum (très fruste) vous le connaissez j'ai envoyé la photographie et plusieurs fragmens aussi portions du colonne pelv: et 2 sacrums dont l'un au moins ne porte aucune marque de vert. caudales [1 sternum (very damaged), you know it from the photograph I sent, and several fragments. Also portions of the pelvic column [synsacrum?] and 2 synsacra of which one at least does not carry any mark of caudal vertebrae]".

In a list found among Newton's papers after his death is his translation of the above list:

"E. Thirion 13 Novm. 1901.
Dodo bones
2 upper mandibles – portions
1 lower complete slightly damage
1 cranium – + fragments
2 pairs coracoids
3 „ fibula
1 „ humeri – one good, one bad
2 wings absolutely complete
3 pairs of quadrates
6 sternal ribs – damaged + fragment
1 pelvic rib, top broken
5 dorsal ribs incomplete + fragment
3 pairs scapulae, a little damaged

1 „ femora + many mutilated
1 „ tibias + ...
1 „ tarso-metatarsus
    several pairs of posterior [= first] metatarsals
    all the phalanges of the feet with claws.
        + good number of phalanges [?]
2 „ "os pharyngiens"
1 „ pterygoid
1 jugal + fragments
1 hyoid
2 or 3 pairs "rotules" su. Dodo?
2 „ undetérmines
5 atlas (very good)
1 complete series of 14 vertebra cervic. & dors. + 60 fragment
2 soldered 15-17 vertebra
2 18th. prepelvic good
1 pelvis – damaged
4 clavicles su. Dodo?
4 caudal vertebra damaged su. Dodo?
1 sternum much damaged
        + many fragments"

[In same letter, 13th November 1901] States that the classification of the vertebrae has now been completely elucidated, and that Oustalet was a little advanced in affirming ten years ago that all was known. Thirioux remarks that his classification of the vertebrae, which he did on the spot and with reference to new discoveries, is definitive.

Newton (20th December 1901) offered £20 plus expenses of insurance and postage for the entire collection.

26th December 1901:
Sends a photograph of his reconstructed dodo skeleton (figure 11). It has a complete skull as well as the vertebral column. The beak, the cranium, the atlas, the 1st cervical vertebra ("la 1.er vert: cerv:"), the notarium, as well as the 18th (prepelvic) vertebra are all from the same bird. The beak was restored in plaster, modelled on the second specimen in his possession.

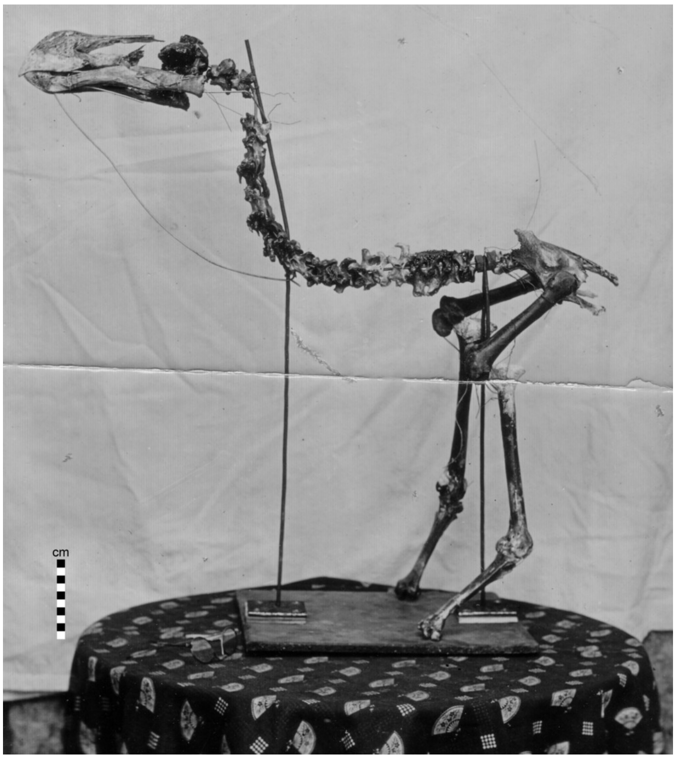


Figure 11: photograph of Thirioux's reconstructed dodo skeleton (letter: 26th December 1901). "Phot. du Didus ineptus au 10.$^{\text{eme}}$".

14th January 1902:
Since his last letter he has found the pygostyle ("la dernière vert: caudale (la terminale)") of the dodo.

[There is an interval of two years in the correspondence]

In 1903, Donald d'Emmerez de Charmoy, curator of Museum Desjardins, exhibited bones of the dodo and *Aphanapteryx*, found by Thirioux in the caverns of Pailles and Mare Chicose, at a conference of the *Société Royale des Arts et Sciences de l'Ile Maurice* (Kœnig 1939). Furthermore, Pitot (1914) mentioned that D'Emmerez de Charmoy submitted a report to the RSASM that included photographs of fossil bones collected by Thirioux. D'Emmerez de Charmoy (1903) also provided a list of the extinct birds of Mauritius, from material collected by Clark, Sauzier and Thirioux.

Newton (undated) sent a clipping of his article (Newton 1904; with references to *Nature* 1885, p.719 & 1890, 402) on Thirioux's finds. The bones referred to in earlier letters [those mentioned by Caldwell (1885)] turned out to be turkeys' bones. Thirioux has sold his collection to the Mauritius Museum (Thirioux-Newton Correspondence, UMZC, synopsis, letter 21).

17th September 1904:
Writes that he has agreed with the "Museum of Mauritius" (Museum Desjardins) the price of RS 1200 (estimated by Newton to be £80) for his entire collection of subfossils. Adds that if he was able to present the collection in Europe then he would have had an advantage, but that it is to remain in its country of origin and he is satisfied.

Donald d'Emmerez de Charmoy, Curator of the Museum (Museum Desjardins), Port Louis:
30th December 1904:
Sends stereoscopic photographs (not enclosed) of the dodo and *Aphanapteryx*. Believes that he can almost completely reconstruct these pieces and says that Newton's advice would be of great help. Mentions Newton's note regarding Caldwell and the bones of the dodo found in the Cave Noyale. De Charmoy states that the bones, which are numerous and indeed those of a dodo, are still currently in his possession and that they still bear handwritten annotations on the locality by Caldwell. Will forward details and says that it would not be bad to return justice to Caldwell ("je crois qu'il ne serait pas mauvais du rendre justice à Mr Caldwell"). Offers to send specimens to Newton.

Newton (7th February 1905) acknowledged receipt of the stereoscopic photographs of the dodo and *Aphanapteryx*, stating that the photographs show some points in the dodo's skeleton that had not yet been described. Newton also commented on Caldwell's finds.

Newton was keen to obtain remains of the dodo, and on 29th October 1905 he wrote to his friend, Edmund Gustavus Bloomfield Meade-Waldo, who was to sail on the yacht *Valhalla*:

> From what you write I should think it very likely that on your way back you will call at Mauritius. In that case you might be doing a great service if you could prevail on the authorities of the Museum there to entrust to you the collection of Dodo's and other mostly extinct birds' bones which they lately bought of a M. Thirion [*sic*], an enthusiastic barber, living in Port Louis, who has been for some years past digging them up for his own satisfaction – he having had the luck to find a place (I have never known clearly whether a cave or not) which has been very prolific. He made a great secret of the place and I don't blame him for that, but he sold all his "find" to the Museum, and there it is with no one, so far as I know, competent to describe it. Among the specimens are portions of the Dodo's skeleton, which were hitherto unknown, and it is most desirable that they should be described and figured properly – to say nothing of the remains of other extinct species, *Lophopsittacus*, *Aphanapteryx*, etc., of which we have but fragments…. It would be a great thing if you could persuade the people there to let you bring them home to have them done – and certainly there is no other place where they could be done properly except Cambridge, because we have by far the most complete skeleton of the Dodo, and almost without exception all the remains of the other birds,

> which were described by my late brother Edward and Gadow in the *Transactions* of the Zoological Society, and it would be a pity if these were described anywhere else (quoted in Wollaston 1921, pp.53-54).

Donald d'Emmerez de Charmoy, 30th January 1906:
States that the stereoscopic photographs he sent to Newton, which are very small, were made using a Verascope de Richard (a stereoscopic camera) giving natural size with natural relief. Refers to the sesamoids of the dodo ("os Sesamoïdes du Dodo"), of which he has many, located on the posterior part of "l'articulation tarso tibiale" (*i.e.* intertarsal seasamoids).

Thirioux, 21st August 1906:
Mentions the damage done to the Museum by the Cyclone of 1874.

Thirioux, 11th January 1907:
Has sold a complete dodo and an *Aphanapteryx*, as well as an almost complete '*Didosaurus*' (*Leiolopisma mauritiana*) and the remains of many other extinct species to the Museum for RS 1200: "I believe I have paid my acknowledged debt for the 1200rs that I mediated, for in addition to the complete set of Dodo [bones] I also equally gave [over] a complete *Aphanapteryx*". However, he states that these lie dormant in boxes ("qui dorment dans les cartons"). As the Museum has no further claims on him he proposes a bargain: that Newton will describe or cause to be described all the specimens sent to him (except that which has already been described) and that these specimens would become the property of the Museum of Cambridge; if there is a surplus Newton would return such bones to the Museum of Port Louis. Asks Newton if he knows of anyone at Port Louis who could aid in sending the bones and states that he asks nothing for himself and that he is to continue collecting, and that if this offer was accepted he would send the bones off immediately.

Newton (23rd February 1907) accepted this offer with the conditions that although he was unable to describe the specimens himself, due to his age, he would have them properly described by a competent osteologist, and also that he reserved the liberty not to describe what is not worth describing. He subsequently sent a money order for £1 to cover insurance and postage.

E. Bateson (22nd February 1907) referred to forwarding agents at Port Louis, and to Thirioux:

> 22 Feb. 1907.
>
> Dear Willy,
>
> I think Messrs Scott & Co:, Port Louis, would undertake the forwarding; including if necessary packing and insurance. [note added: I think they are the agents of the British India S. S. Coy] As Mr Thiriou [*sic*] is a man of genius, and consequently a little difficile, Professor Newton might prefer to explain his requirements to the British India Co: over here, who would no doubt instruct their agents in Port Louis accordingly. [...] Mr. Thiriou had a large number of 'cartons' full of bones when I saw him in his shop four years ago, and I am glad to hear that they are coming to Cambridge

Thirioux, 29th March 1907:
Refers to his previous transactions with the Museum at Port Louis, and expresses himself as satisfied with Newton's conditions. Will send a box of specimens of owls, pigeons, tortoises and lizards, as well as other miscellaneous remains. Remarks that he has given all the specimens of "Didus Mauritianus" (presumably '*Didosaurus mauritianus*') to the Museum. Remarks that he is getting old, as Newton is, and that going to the mountains tires him, although "I always find pleasure".

Thirioux, 16th April 1907:
States that Newton will receive at the same time as this letter a second case containing the remains of the dodo and *Aphanapteryx*, "these remains though incomplete will enable you, I am certain, to catalogue these 2 sp: the one [*i.e.* the dodo] definitively as amongst [the collection] are to be found many undescribed pieces, and if amongst those equally undescribed that have been in my possession I happen to find others I will share with you" ("ces débris quoique incompletes vous permettront j'en suis certain de cataloguer ces 2 esp: l'une form définitive car il se trouve parmi beaucoup de pièces non décrites et si parmi celle également non décrites qui ont étés en ma possession j'avais la chance d'en

retrouver d'autres je vous en farais part"). Thirioux is probably saying that if he finds other undescribed bones in amongst his collection he would share them with Newton (Anthony Cheke, pers. comm., 28th January 2011). States that D'Emmerez de Charmoy visited him, being aware of his first sending of bones to Newton, and requested that he cease sending specimens and that the museum would compensate him. Thirioux replied that it was too late and that he had made arrangements with Newton and was not under obligation to the Mauritius Museum any more. Enumerates the boxes sent, including "3 boxes Didus 1 large 2 small".

Newton (11th May 1907) acknowledged the arrival of the specimens mentioned above, although stated that the labelling was insufficient.

Boxes: three boxes of dodo bones, one large, two small ("3 boîtes Didus 1 grand 2 petites"); four boxes of *Aphanapteryx* bones, two large, two small; box, containing two smaller ones, of tortoise bones; box of miscellaneous remains; spider. According to the synopsis of the Thirioux-Newton Correspondence, there is no indication that this letter was answered by Newton and the box to which it referred was not opened by him. The letter was answered by S. F. H. [Sidney Frederic Harmer], 30th May 1907 (UMZC, Letter-book B.13).

Letter 33A, Thirioux-Newton Correspondence, UMZC, synopsis:

("not represented by any other document than this paper")
"Contents of the box (opened by S. F. H.) referred to in [letter] 33.

1. large cardboard box, containing two others, marked "Tortues os divers vert. caudales cervicales dorsales doigts de pied etc." [Tortoises various bones caudal vert. cervicals dorsals digits of foot etc.]
2. Box marked "Didus ineptus – pièces diverses du même specimen." [*Didus ineptus* – various parts of the same specimen.]
3. Box marked "Aphanapteryx (pelvis, femurs, tibias) "2 cubities oiseaux?" [*Aphanapteryx* (pelvis, femora, tibiotarsi) 2 ulnae birds?]
4. Box marked "Os Aphanapterix divers" [*Aphanapteryx* various bones]
5. „ „ 74 doigts de pied Aphanapterix. 3 humerus dito" [74 toes *Aphanapteryx*. 3 humeri ditto]
6. „ „ "Araigné trouvée dans les fouilles" (This is in fragments and is quite useless) [spider found in the excavations]
7. "Os Aphanapterix plus 2 humerus et 3 os hyoide?" [*Aphanapteryx* bones plus 2 humeri and 3 hyoid bones?]
8. "pelvis divers et becs?" [various pelves and beaks?]
9. "1 … sommet fibule [1 … end of fibula]
   "12 ongles et 8 vert. caudales Didus ineptus [12 unguals and 8 caudal vertebrae *Didus ineptus*]
   "1 os pharinx 1 phalange metacarpien [1 pharynx bone 1 alar phalanx]
   "sommet lateral." [top of lateral.]

The above (1-9) were in separate boxes".

Thirioux, 26th April 1907:
Sends box of bones of parrots. These were found exclusively up to now at: 1) the Vallée du Pouce, Port Louis, at an altitude of about 1300 feet (422.2m), and at 2) the Vallée des Pailles. These two localities are separated by a "very steep and very narrow ridge, which means that the remains are found in a very circumscribed area" ("glacis à pic et très étroit ce qui fait que ces restes se trouvent dans une zone très circonscrite"). He lists the bones, including those of *Lophopsittacus mauritianus* and remains very similar to *Necropsittacus rodericanus*. The box also contains bones of *Falco punctatus*, in addition to a mixed lot of bones of various kinds. More will be sent later if found. Mentions the shells found with the subfossils. Some species are very abundant, especially those of the genera 'Cyclostomes,' 'Helix' and 'Pupas,' all extinct species. He sent these subfossil shells to Newton on 12th July 1907.

Thirioux wrote to Gadow on 12th September 1907, acknowledging the latter's letter of 20th July. Gadow added a postscript to this letter stating that the collection is not worth writing a paper about (UMZC Thirioux-Newton Correspondence, synopsis).

24th July 1908:

Sends box of bones (received at the same time), mostly fragmentary; consisting mainly of the bones of tortoises and bats. Offers to send lizard bones if desired. Criticizes Rothschild's account of Fauna of Mascarene Islands, especially with regard to '*Leguatia gigantea*' & "l'oiseau bleu de Bourbon" (UMZC Thirioux-Newton Correspondence, synopsis).

Although much of Thirioux's dodo material seems to have been lost, some survives at Cambridge (UMZC 415.KK, registered 30th April 1908, determinations made by Gadow): two cervical vertebrae, a humerus, a radius, a 'carpal,' two tibiotarsi and two tarsometatarsi (mostly incomplete); box: atlas, another cervical vertebra, and fragments of wing bones; added to 415.H: three caudal vertebrae, two "end-phalanges of R wing," eight pedal unguals. Along with these subfossil bones were some gastropods, including *Helix*, *Clausilia*, Cyclostomatidae?

Thirioux-Newton Correspondence, UMZC, synopsis: "See Reg. April 30, 1908,15 & separate list of the specimens referred to in that entry."

> Thirioux, E. Reg. April 30, 1908, 15.
> Collection of subfossil bones, etc., from Mauritius, made by the donor
> The bones examined by Dr. H. Gadow, who made the following determinations.
> 415 KK {
> a) Didus ineptus (Dodo)
> [box] 2 cv, 1 hum, 1 rad, 1 carpal, 2 tib, 2 tmt (mostly incomplete).
> [box]. atlas, another vertebra, and frags of wing-bones, etc.
> [added to the articulated skeleton] 3 caudal vertebrae, 2 end-phalanges of R wing, 8 ungual phalanges of feet.
>
> Gastropods – Helix.; Cyclostomatidae?; Clausilia
> & molluscs -

The entry in the UMZC Accessions Register (page 157) reads:

157 Museum No.	1908 DATE.	NAME.	DESCRIPTION, REFERENCE, etc.	
	April 30. 15.	Bones of Dodo and other extinct Birds ; with some Reptilian remains ; a few bones of Pteropus; and some shells.	Numerous specimens, many of them fragmentary, sent by M. Thirioux to Professor Newton, before his (Prof. N.'s) death on June 7, 1907. See Thirioux correspondence, and his list of sets of bones, as determined by Dr Gadow.	{

LOCALITY.	DONOR.
Mare aux Songes, Mauritius and other localities in Mauritius	E. Thirioux, Port Louis, Mauritius

Thirioux's dodo bones in the UMZC collections are listed under UMZC 415.H and 415.KK in the Catalogue of Specimens.

Additional References

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